DOCUMENT RESUME

ED 464 202 CE 082 661

AUTHOR	Livingstone, D. W.
TITLE	Basic Patterns of Work and Learning in Canada: Findings of the 1998 NALL Survey of Informal Learning and Related Statistics Canada Surveys. NALL Working Paper.
INSTITUTION	Ontario Inst. for Studies in Education, Toronto. New Approaches to Lifelong Learning.
SPONS AGENCY	Social Sciences and Humanities Research Council of Canada, Ottawa (Ontario).
REPORT NO	NALL-WP-33-2001
PUB DATE	2001-01-00
NOTE	89p.; Tables 2.1, 2.2, 2.4, 2.5, 2.6, 2.8 and 2.9 are incomplete in text; complete copies are at end of the document. Report commissioned by the Canadian Policy Research Networks.
AVAILABLE FROM	For full text: http://www.oise.utoronto.ca/depts/sese/csew/nall/res/33working&le arning.htm.
PUB TYPE	Numerical/Quantitative Data (110) -- Reports - Research (143)
EDRS PRICE	MF01/PC04 Plus Postage.
DESCRIPTORS	*Adults; Change; Developed Nations; Economic Development; Economic Factors; *Education Work Relationship; *Educational Needs; Educational Philosophy; Educational Policy; Employment; Employment Projections; *Employment Qualifications; Foreign Countries; Futures (of Society); Government Role; Housework; Informal Education; Job Skills; Knowledge Level; Labor Needs; Lifelong Learning; National Surveys; On the Job Training; *Participation; Postsecondary Education; Tables (Data); *Underemployment; Volunteers
IDENTIFIERS	Canada

ABSTRACT

A study provided extensive statistics and documentation of Canadian adults' work and learning activities. The study included statistics for household labor and community volunteer activities as well as paid employment. Learning activities included both formal course work and informal learning, as well as on-the-job training. Data sources were the 1998 National Survey of Learning and Work by the Research Network on New Approaches to Lifelong Learning (NALL); estimates of the extent of unpaid household and community work; the Adult Education and Training Survey; the 1996 census; the National Survey of Giving, Volunteering, and Participating; and the General Social Survey. Findings of the study included the following: (1) in contrast to the concerns about Canadians' need to become "lifelong learners," the study found that most Canadians are already extensively engaged in learning but that the needs for higher-level job skills has been greatly exaggerated; (2) in terms of work, Canadian adults are now spending about as much time in unpaid household and community work as they are in paid employment; (3) despite the rhetoric about a "knowledge-based economy," the study found only a gradual upgrading of job skill requirements, and knowledge workers still comprise a small minority of the labor force; (4) as a result of the increased amount of learning by adults and the slower increase of job requirements, many Canadians find themselves underemployed; and (5) instead

Reproductions supplied by EDRS are the best that can be made from the original document.

of focusing efforts on further education and training for Canadians, the society and government should address major paid work reforms in order to prevent underemployment from becoming one of the major social problems of the 21st century. (Contains 160 references.) (KC)

Reproductions supplied by EDRS are the best that can be made
from the original document.

ED 464 202

NALL Working Paper #33-2001

BASIC PATTERNS OF WORK AND LEARNING IN CANADA:

Findings of the 1998 NALL Survey of Informal Learning and Related Statistics Canada Surveys

©D.W. LIVINGSTONE

January, 2001.

D.W. Livingstone is the leader of the national research network on New Approaches to Lifelong Learning (NALL) which is funded by the Social Sciences and Humanities Research Council of Canada (SSHRC). He is also head of the Centre for the Study of Education and Work (CSEW) at OISE/University of Toronto. More information on NALL and CSEW may be found at the website: www.nall.ca

the research network for New Approaches to Lifelong Learning

NALL

Le Réseau de recherche sur les nouvelles approches de l'éducation permanente

---

TABLE OF CONTENTS

LIST OF TABLES

ACKNOWLEDGMENTS

EXECUTIVE SUMMARY

INTRODUCTION: PERSPECTIVES ON WORK AND LEARNING IN THE INFORMATION AGE
Three Spheres of Work and Learning
Data Sources: Surveys of Learning and Time Use
Contending Perspectives on Work and Learning
Computers and the "Information Age"
Chapter Outlines

CHAPTER ONE THE EMERGENCE OF A KNOWLEDGE-BASED ECONOMY AND THE REDISTRIBUTION OF PAID AND UNPAID WORK
Gradual Emergence of a Knowledge-Based Economy
Current Employment Statuses
Paid and Unpaid Work Time
Employment Hours and Time Crunch

CHAPTER TWO PROFILES OF ADULT LEARNING: MAPPING THE ICEBERG
Introduction
The Growth of Schooling and Non-Formal Education
Canadians' Informal Learning Practices
Employment-related Informal Learning
Household Work-related Informal Learning
Community Volunteer Work-related Informal Learning
Other General Interest Informal Learning

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☐ This document has been reproduced as received from the person or organization originating it.
☒ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY
D.W. Livingstone
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

CE062661

BEST COPY AVAILABLE

Total Involvement in Informal Learning
Relations Between Schooling, Non-Formal Education and Informal Learning

CHAPTER THREE PATTERNS OF WORKING AND LEARNING
Relations of Work Time and Learning Time
Employment Status and Learning Practices
Occupational Groups and Learning Practices
Underemployment
Underemployment and Adult Learning

CHAPTER FOUR LINKING FORMAL AND INFORMAL LEARNING: BARRIERS AND INCENTIVES
Demographic Factors and Learning
Age and Lifelong Learning
Sex and Race Differences in Learning Activities
Contextual Barriers to Course Participation
Interrelations of Economic, Demographic and Contextual Factors
Incentives for Increased Course Participation: PLAR

CONCLUSION: IMPLICATIONS FOR EDUCATIONAL AND ECONOMIC REFORM
Education Program Responses to Popular Demand for Learning
Economic Reforms to Address Underemployment

ENDNOTES

REFERENCES

LIST OF TABLES

Table 1.1 Employment by Type of Occupation, Canada, 1971-96

Table 1.2 Specific Vocational Preparation Requirements, Canadian Job Structure, 1971-91

Table 1.3 Employment Statuses, Canadian Adults, 1997-98

Table 1.4 Paid Work, Household Work and Community Volunteer Work Time by Sex, Canada, 1998

Table 1.5 Employment Status by Average Paid and Unpaid Work Time for Men and Women, Canada, 1998

Table 1.6 Usual Weekly Paid Work Hours, Canada, 1976-97

Table 1.7 Usual Employment Hours by Preferred Hours, Employed Labour Force, 1998

Table 2.1 Post-secondary Education Completion, 25-29 Age Group, Canada, 1961-98

Table 2.2 Participation in Non-Formal Education, Canadians Over 17, 1960-1997 (%)

Table 2.3 Participation in Specific Programs and Courses, Canadians Over 17, 1991-97 (%)

Table 2.4 Employment-related Informal Learning Activities, Employed Labour Force, 1998

Table 2.5 Distribution of Employment-related Informal Learning Time, Employed Labour Force, 1998

Table 2.6 Household Work-related Informal Learning Activities, All Participants, 1998

Table 2.7 Community Work-related Informal Learning Activities, All Participants, 1998

Table 2.8 General Interest Informal Learning Activities, All Participants, 1998

Table 2.9 Distribution of Total Weekly Hours of Informal Learning, All Adults, 1998

Table 2.10 Participation in Non-Formal Education and Informal Learning by Formal Schooling, All Adults, 1998

Table 2.11 Participation in Employment-related Courses/Workshops and Informal Learning, Employed Labour Force, 1998

Table 3.1 Associations between Hours of Work and Hours of Informal Learning, Canadian Adults, 1998

Table 3.2 Employment Status by Participation Rates in All Courses, Employment-related Courses/Workshops and Employment-related Informal Learning, Total Labour Force, 1998

Table 3.3 Employment Status by Average Hours per Week of Course-based Education, Employment-related and Total Informal Learning, Total Labour Force, 1998

Table 3.4 Employment Status by Participation in Employment-related Courses / Workshops and Informal Learning, Selected Topics, Total Labour Force, 1998

Table 3.5 Formal Schooling, Current and Planned Non-formal Courses and Total Informal Learning by Occupational Group, 1998

Table 3.6 Occupational Group by Participation Rates in Job-related Courses/Workshops and Job-related Informal Learning, 1998

Table 3.7 Occupational Group by Average Hours per Week of Course-based Education and Employment-related Informal Learning, 1998

Table 3.8 Self-Ratings of Job Qualifications by Length of Time Required to Learn Your Job, Employed Labour Force, 1998

Table 3.9 Measures of Underemployment, Employed Labour Force, 1998

Table 3.10 Incidence of Underemployment by Occupational Class, Employed Labour Force, 1998

Table 3.11 Participation in Job-related Courses/Workshops and Job-related Informal Learning by Measures of Underemployment, Employed Labour Force, 1998

Table 4.1 Proportion Employed by Age and Sex, All 18+ Adults, 1998

Table 4.2 Age Group by Current and Planned Courses, Preferred Mode of Learning and Incidence of Informal Learning, All Adults, 1998

Table 4.3 Employment-related Course/Workshop Participation and Informal Learning by Age, All Adults, 1998

Table 4.4 Most Important Source of Job Knowledge by Age, Employed Labour Force, 1998

Table 4.5 Employment-related Course/Workshop Participation and Informal Learning by Sex, Total Labour Force, 1998

Table 4.6 Employment-related Course/Workshop Participation and Informal Learning by Self-Reported Racial Identity, Total Labour Force, 1998

Table 4.7 Barriers to Participation in Adult Courses for Non-Participants, Total Labour Force, 1993-1998

Table 4.8 Differential Incidence of Contextual Barriers to Adult Courses by Socio-demographic Status, Interested Non-Participating Adults, 1997 (%)

Table 4.9 Differential Incidence of Contextual Barriers to Adult Courses by Occupation and Racial Identity, Uninterested Non-participants in Active Labour Force, 1998

Table 4.10 Planned Future Course Participation and Interest in Prior Learning Assessment and Recognition (PLAR) by Current Participation in Adult Courses, All Adults, 1998

Table 4.11 Planned Future Course Participation and Interest in Prior Learning Assessment and Recognition (PLAR) by Social Background, All Adults, 1998

ACKNOWLEDGMENTS

This report owes its existence primarily to two people. Allen Tough is widely credited with initiating the modern empirical study of adults' informal learning in the 1960s. As a former colleague at OISE, he directly inspired my initial interest in this field and more recently collaborated with several others in the creation of the SSHRC-funded research network for New Approaches to Lifelong Learning (NALL) which provided the funding support for the first national survey of informal learning practices, the central data source for this analysis. Graham Lowe, Director of the Work Network at Canadian Policy Research Networks (CPRN), has played a leading role in recent empirical research on school-work transitions and education-job mismatches in this country. He commissioned this report, offered astute editorial advice and aptly navigated its completion.

Doug Hart and Milosh Raykov are primarily responsible for the multitude of statistical analyses of the NALL and AETS survey data sets. Jill Given-King assisted with the formatting of the text. Many of my colleagues in the NALL research network provided helpful hints along the way (for a full listing see the NALL website: www:nall.ca). I am also grateful to three anonymous reviewers for their constructive criticisms of a prior draft. However, the responsibility for the interpretation of findings and any remaining errors or omissions is mine alone.

EXECUTIVE SUMMARY

This report offers the most inclusive documentation to date of Canadian adults' work and learning activities. Work is considered in terms of household labours and community volunteer activities as well as paid employment. Learning is considered in terms of informal learning activities as well as initial formal schooling and non-formal education courses. The profiles of work and learning are based primarily on the first national survey of informal learning conducted in 1998 by the SSHRC-funded research network on New Approaches to Lifelong Learning (NALL), supplemented by secondary analyses of the 1997 Adult Education and Training Survey (AETS) and several other recent surveys by Statistics Canada.

There is now great emphasis in public debate about the rapid emergence of a "knowledge-based economy" and the need to encourage more "lifelong learning" in order for people to keep up with the demands of this new economy. In contrast, this report finds that while Canadians are already extensively and increasingly involved in learning throughout their lives, the demand for higher level job skills has been much exaggerated and underemployment of previously attained job skills is an increasingly common condition.

In terms of work, Canadian adults in general are now spending as much time in unpaid household and community work as they are in paid employment. There are continual changes in employment

conditions, including the growth of service sector occupations, an increase in part-time jobs and polarization of employment hours, and diffusion of information technology through paid workplaces. But, in spite of much rhetoric about the emergence of a "knowledge-based economy," there has only been a gradual net upgrading of job skill requirements and knowledge workers still comprise a small minority of the labour force.

In terms of learning, Canada now leads the world in its levels of post-secondary education. Adult or non-formal education course participation has also expanded very rapidly since the 1960s. In addition, according to their self-reports, Canadian adults are now devoting an average of 15 hours a week to informal learning activities related to their paid employment, household duties, volunteer community work and other general interests. Those in the active labour force are spending an average of 6 hours per week in job-related informal learning pursuits. The participation rates and time involved in informal learning are much greater than in adult education courses. Adult informal learning is like the submerged portion of an iceberg, not usually seen but essential to supporting the visible part. The findings reported here suggest that by any reasonable definition Canada is already a "learning society".

Analyses of the interrelations between work and learning find that there is generally a positive association between the amount of time that people spend in paid employment, household labours and community work and the time they spend in respective work-related informal learning. But this relationship is stronger in more discretionary forms of work, notably community volunteer work. Employment-related informal learning is found to be more extensive than course-based training across nearly all employment statuses and occupational groups. Since adult learning has increased rapidly while changes in skill and knowledge requirements of the job structure have been more gradual, many Canadians now find themselves underemployed in the sense that they are unable to use many of their employment-related skills in their current jobs. Estimates based on the NALL survey indicate that about 20 percent of the employed labour force now consider themselves to be underemployed, while more objective measures suggest that as much as half of the labour force may have skill levels that exceed those actually required to perform their jobs. Regardless of the current mismatch between job skills and requirements, the vast majority of workers continue to be actively involved in quite extensive employment-related learning activities. Underemployment has not discouraged the pursuit of lifelong learning.

Adults prioritize different forms of learning through the life course. Young people devote a great deal of time to both course participation and informal learning in the transition to adulthood. The relative importance of courses diminishes as middle-aged adults accumulate more experiential knowledge. Older employees participate very little in courses but continue to be active informal learners, as well as valuable informal tutors for younger workers. Retired people also continue to be active informal learners. Those in subordinate social statuses, including lower occupational groups, women and visible minorities, tend to experience greater barriers to participation in adult education courses. The major barriers involve limited material provisions, such as lack of time and money, family duties and inconvenient locations, rather than lack of motivation to participate. Provisions to validate workers' informal learning through prior learning assessment and recognition (PLAR) could make significant incremental improvements in current educational inequities.

But if these profiles of work and learning and their interrelations are generally accurate, it is very unlikely that further education and training reforms will be able to bridge the "education-jobs gap" (Livingstone, 1999a) and resolve the growing problem of underemployment. Pursuit of knowledge and educational improvements should always be encouraged for human enrichment and educational reforms to improve access (more flexible course scheduling, tuition fee subsidies, child care provisions, PLAR, more responsive curriculum) should be implemented. But only economic reforms that address basic dimensions work reform, including the redistribution of work time and the democratization of paid work, can substantially enhance the quality of employment and workers' opportunities to apply their extensive acquired knowledge. We must address major paid work reforms. To do less will ensure that underemployment becomes one of the major social problems of the 21st century.

The conditions of work and learning now appear to be changing quickly in Canadian society. A basic assumption underlying much of the recent public discussion about work and learning is that because new jobs are rapidly requiring greater knowledge and skill, a lifelong learning culture must be created in order for Canada and Canadians to succeed in an increasingly information-based world. Virtually every recent public policy statement begins with this assumption. Consider the following examples:

> Information technology is changing our world. It is reshaping our economy and affecting the life and work of almost every Canadian....If Canadians are to embrace and welcome change, they must create a society that places learning at its very heart, and nourishes them in their personal and working lives. (Information Highway Advisory Council, 1995, pp. vii, 57).

> Canada's workplaces are changing with unnerving rapidity, and since the world of work casts a long shadow on the rest of life, many Canadians are anxious about the future....As long as Canada maintains its investments in educating the new generation of workers and enhancing the skills of older workers, the long-term outlook for the productive potential of the Canadian economy is very positive. (Advisory Committee on the Changing Workplace, 1997, pp. 5-6)

> Technology is altering every aspect of our lives. Knowledge and creativity are now the driving force in a new economy....Because of the changing nature of the world economy, the prospects for a high quality of life in any country will depend—as never before—on having a population that is adaptable, resilient and ready to learn throughout life. (Speech from the Throne to Open the Second Session of the Thirty-Sixth Parliament of Canada, 2000, pp. 1,4).

This report critically assesses the assumption of the pervasiveness of a "knowledge-based economy" and the urgency of promoting increased learning efforts, through providing a broad empirical profile of the current work and learning activities of the Canadian adult population and of their interrelations. The Introduction presents the expansive conceptions of work and learning which informed the collection of evidence, as well as summarizing the basic data sources, theoretical perspective and research questions that have guided the analysis. The rapid diffusion of computers which justifiably provides the basis for characterizing the current period as the "information age" is then briefly documented. An outline of the following chapters is also provided.

Three Spheres of Work and Learning

Contemporary thinking and research about work and learning generally suffer from narrow conceptions of both phenomena. In economically advanced societies, there are at least three distinguishable spheres of work (paid employment, housework and community volunteer work) and three spheres of learning (initial formal schooling, further adult or non-formal education and informal learning).

Work" is commonly regarded as synonymous with "earning a living" through paid (or more rarely unpaid) employment in the production, distribution and exchange of goods and services commodities. The current report will also focus on paid employment statuses, but will at least briefly examine other important forms of work. Most of us must do some household work and many need to contribute to community labours in order to reproduce ourselves and society. Both housework and community volunteer work are typically unpaid and underappreciated, but they remain essential for our survival and quality of life (see Waring, 1988). Furthermore, the relations between paid work, housework and community work may represent major dimensions of future economic change. Men and women are continuing to renegotiate household divisions of labour, while more and more aspects of housework and community work are being transformed into new forms of paid employment.

"Learning," in the most generic sense, involves the acquisition of understanding, knowledge or skill anytime and anywhere. Learning occurs throughout our lives. The sites of learning make up a continuum ranging from spontaneous responses to everyday life to highly organized participation in formal

education programs. Three forms of intentional learning are now commonly identified by researchers: formal schooling, non-formal education and informal learning.[1] The dominant tendency in contemporary thought has been to equate learning with formal education, the provision of learning opportunities in settings organized by institutional authorities and led by teachers approved by these authorities. Education has frequently been identified with continuous enrolment in formal schooling from early childhood to tertiary levels (see Illich, 1971). In addition, adult or non-formal education includes a diverse array of further education courses and workshops in many institutionally organized settings, from schools to workplaces and community centres. Such continuing education is the most evident site of lifelong learning for adults past the initial cycle of schooling. But we also continually engage in informal learning activities to acquire understanding, knowledge or skill outside of the curricula of institutions providing educational programs, courses or workshops. Informal learning, which we undertake individually or collectively on our own without externally imposed criteria or the presence of an institutionally authorized instructor, is much more widespread among adults than either initial school attendance or further adult education.[2] As Allen Tough (1978) has observed, informal learning is the submerged part of the iceberg of adult learning activities. It is at least arguable that, for most adults, informal learning represents our most important form of learning for coping with our changing environment. No account of "lifelong learning" can be complete without considering peoples' intentional informal learning activities as well as their initial formal schooling and further adult or non-formal education through the life course.

In short, both work and learning are more extensive and complex phenomena than discussions of employment and education usually imply.

A narrow focus on relations between paid employment and organized education ignores significant interrelations between these and other dimensions of work and learning. It is increasingly recognized that early informal childhood socialization is highly influential in determining success in formal schooling. There is far less appreciation of the fact that continued informal learning is vitally important for success in paid workplaces. Recent studies have confirmed that most job-related learning is done informally (see Betcherman et al, 1997; Center for Workforce Development, 1998). Through a combination of initial schooling, further non-formal education and informal learning, the vast majority of workers manage to become at least adequately qualified for their current jobs. Yet the dominant discourse about a pressing need for creation of "learning organizations" ignores these realities of interaction between organized education, informal learning and job performance, and presumes that the central challenge for improved enterprise performance is for workers to become more active and motivated learners. Furthermore, many valuable transfers of knowledge and skill between these three basic spheres of learning and among the three spheres of work are similarly unrecognized or discouraged by actual workplace organization (see Livingstone, 1999a).

Another limitation is that most studies of paid work and education have focused too narrowly on immediate payoffs to employers. From a short-term management perspective, virtually the only relevant learning for employees is job training that can enhance the productivity or profitability of the company. From this vantage point, much of the learning that workers do both on and off the job is effectively non-existent. But more ethnographic studies have discovered, for example, that many assembly line workers have developed informal learning networks to teach themselves how to use personal computers. Some of these workers have become competent computer programmers even though they have no employer encouragement and no immediate opportunities to use these skills in their jobs (Sawchuk, 1996). Other Canadian surveys have found that corporate executives, managers and professional employees were very much more likely to be able to apply their general work-related learning in their jobs than were industrial and service workers whose general knowledge is often regarded as irrelevant to enhancing current job performance (Livingstone, 1997a). What workers learn informally on and off the job is at least potentially applicable both in jobs redesigned to more fully use workers' growing repertoire of skills and in other socially useful and fulfilling household and community activities The important point is that we need to find out how relevant this more general and informal knowledge is rather than continuing to ignore it.

Research on work and learning requires more inclusive conceptions that permit recognition of all substantial spheres of work and learning and their multiple interrelations. This broader perspective must

reflect and respect the experiences and needs of all groups of workers. It is with this broad conceptual framework and attempted open standpoint that we have conducted the First Canadian Survey of Informal Learning Practices (NALL, 1999) which provides much of the evidence for this report. We are under no illusion that such an exploratory survey is capable of uncovering the deeper levels of either individual or collective knowledge gained in informal learning practices. But, after a careful review of the relevant research literature (see Adams et. al., 1998), we do aim to generate useful profiles of the basic patterns of intentional informal learning and link them with organized forms of schooling and non-formal education and the different forms of work more fully than most prior studies, and thereby to contribute to more nuanced appreciation of the multiple dimensions and relationships of the work and learning continua.

Data Sources: Surveys of Learning and Time Use

The present report relies primarily on data generated by the 1998 national survey of learning and work by the Research Network on New Approaches to Lifelong Learning (NALL), supplemented where possible by other recent national surveys which provide data on employment and adult education courses as well as estimates the extent of unpaid household and community work. NALL is located at OISE/UT and has been funded by the Social Sciences and Humanities Research Council of Canada (SSHRC) to identify the extent of adult learning, the existence of social barriers to learning and more effective means of linking learning with work. The NALL survey offers unique insights into the full array of learning and work activities among Canadian adults (see box).

While the NALL survey is the major source for most of the empirical analyses presented in the following chapters, it is supplemented by relevant data from the Adult Education and Training Survey (AETS) which has been conducted periodically by Statistics Canada (1997a) and which provides comparable data on employment and adult education for 1991, 1993 and 1997, respectively. In addition, the 1996 Census included questions on unpaid household work for the first time (Statistics Canada, 1998). In 1997, the National Survey of Giving, Volunteering and Participating expanded on an earlier 1987 survey of volunteering to provide the most inclusive profile yet on community volunteer work (Hall et al. 1998). Finally, the General Social Survey (GSS) has measured the time uses of Canadians in 1986, 1992 and 1998 and provides estimates of time spent in paid and unpaid work, organized education and other activities (General Social Survey, 1999). Taken together, all these data sets begin to provide a fairly comprehensive picture of work and learning activities of Canadian adults.

The 1998 NALL survey of adults' current learning is the first large-scale survey in this country and the most extensive one anywhere to attend to the full array of adults learning activities, including not only schooling and non-formal education courses but also informal learning that occurs outside organized education. A representative telephone survey of 1562 Canadian adults over 18 years of age was conducted for NALL between June 6 and November 8, 1998 by the Institute for Social Research at York University. The NALL survey sample includes adults who speak English or French, reside in a private home (not old age/group homes/penal or educational institutions) with a telephone. All provinces and households and individuals within households were given an equal chance of selection using random digit dialing. The average telephone interview time was 32 minutes. Efforts to maximize response rate included extensive call-backs at different times of day when necessary. 24% of the interviews were complete on first call; 54% completed within 2 further call-backs; 76% completed within 6 total calls; 97% in 14 or less calls; the final 3% took between 14 and 28 calls. The response rate was 60% of the eligible households, 64% if we exclude the households whose eligibility was not determined. The data presented in this report are weighted by known population characteristics of age, sex and educational attainment to ensure profiles that are representative for Canada as a whole.

The NALL interview schedule addressed all three basic types of both learning (formal school, adult or non-formal education, and informal learning) and work (employment, housework, and community volunteer work), but with a special focus on the diverse aspects of informal learning; a variety of social background factors were also addressed. This survey asked respondents to talk about learning from their own standpoints. The survey is therefore limited to intentional informal learning that respondents can distinguish for themselves from more incidental and tacit forms of learning they do beyond externally authorized curricula. Given both the subjective nature of self-reported informal learning and the uniqueness of the survey in Canada, the estimates of informal learning profiles presented in this report require further testing to ensure reliability. However, the interview design is based on a careful review of prior studies of informal learning, including extensive Canadian case studies (see Tough, 1979), and questions have been designed to address concerns about validity in earlier research on self-directed learning. (Those interested in the interview schedule or further details about the survey may visit the NALL website: www.nall.ca).

Contending Perspectives on Work and Learning

Most theorizing about work and learning has been similarly limited to trying to explain relations between paid employment and educational participation. In simplest terms, these theories can be identified as either supply side, demand side or supply-demand interactive.[3]

Supply-side theories basically suggest that the pursuit of more advanced education generates more productive workers and that their "intellectual capital" investment leads to a more prosperous economy. Human capital theories which assume that investment in education necessarily results in increased economic growth are the leading examples (Becker, 1964, 1993). Invest in education and good jobs will follow. This is the "field of dreams" approach.

Demand-side theories are more diverse. On the one hand are the advocates of a "knowledge-based economy" who assume that modern information-based production systems now require workers with substantially more complex analytic and design skills to operate them, and that education systems must increasingly respond to the need to produce such knowledge workers (Machlup, 1980; Marshall and Tucker, 1994). On the other hand, there are the prophets of the degradation of paid work who argue that inherent tendencies within modern production systems are leading either to a profound deskilling of job requirements or widespread automation, with consequent proliferation of underemployment and unemployment (Braverman, 1974; Rifkin, 1995). In both optimistic and pessimistic demand-side varieties, the labour force is generally regarded as reactive to these secular trends rather than influencing them through their learning and other activities.

Supply-demand interactive theories emphasize the relational character of education and job connections in terms of the bargaining processes between employers and employees. A real or anticipated oversupply of highly qualified job seekers may lead employers and/or well-organized groups of professional or skilled employees to raise entry criteria substantially beyond what is actually required to perform the work. Screening theories suggest that greater formal education serves as an admission

ticket to better jobs but is not necessarily related to greater productivity (Stiglitz, 1975). Credential society theories explain job entry processes in terms of the power of these groups to construct restrictive qualification regimes (Collins, 1979). Conversely, either an undersupply of qualified applicants or the prospect of greater productivity from an underutilized workforce may provoke redesign of job performance demands. Undersupply views are currently limited to accounts of frictional unemployment because of temporary supply-demand mismatches and those who see current shortages in certain specialized skill occupations as serious obstacles to the blossoming of a knowledge-based economy (MacBride-King et al, 2000). Generally speaking, supply-demand interaction theories are better able than simpler supply or demand-side theories to explain more complex patterns of education-employment relations, notably the now widespread phenomenon of mismatches between the educational qualifications of the available labour force and aggregate job requirements.

The particular version of a supply-demand interaction theory of employment-learning relations that I have developed and documented elsewhere posits differential degrees of matching of knowledge attainments and job requirements related to negotiations between specific occupational groups, genders, generations and ethnic groups (Livingstone, 1999a). In simplest terms, the extent to which the relevant knowledge of specific groups is recognized in employment relations is contingent on how much power they are able to exert. In any private market-based economy, the sweep of change is continual, driven by three well-documented underlying relationships: (1) inter-firm competition to make and sell more and more goods and services commodities at lower cost and price for greater profits (see Brenner, 2000); (2) struggles between business owners and those who offer their hired labour over the conditions of employment and knowledge requirements, especially lower labour costs for more profits versus higher wages for better subsistence (see Burawoy, 1985); and (3) continual modification of the techniques of production to achieve greater efficiency in terms of labour time per commodity, leading to higher profits, better employment conditions or both (see Freeman and Soete, 1994). Inter-firm competition, conflicts between employers and employees over working conditions, and technological innovation all lead to incessant shifts in the numbers and types of jobs available. Population growth cycles, modified household needs and new legislative regulations also frequently serve to alter the supply of labour. At the same time, popular demand for general education and specialized training increases cumulatively as people generally seek more knowledge, different skills and added credentials in order to live and work in such a changing society.

So, there are always "mismatches" between employers' aggregate demand and requirements for employees on the one hand, and the aggregate supply and qualifications of job seekers on the other. The accelerating productivity of capitalist enterprises regularly throws workers into unemployment, reproducing the most evident part of the reserve army of labour. In societies like Canada with liberal democratic state regimes that acclaim the right to equal educational opportunity, and with labour markets in which both employers and job seekers make mainly individual employment choices, the dominant historical tendency has been for the supply of educationally qualified job seekers to exceed the demand for any given type of job. These same dynamics also generate formal underqualification of some workers, particularly older employees who are experienced in their jobs and have had few incentives to upgrade their credentials. But it also follows from this perspective that the work-related learning that occurs beyond the direct control of dominant occupational, gender, age and ethnic groups is likely to be less hierarchically ordered in many respects, including the time devoted to it and the competencies attained, than is the case for formal schooling credentials. Employment-related informal learning especially may occur anywhere at the discretion of the learners.

This theoretical perspective can be applied to the other forms of work besides paid employment (household and community labours). Household labour is just as necessary as paid employment labour for social reproduction, but time devoted to such domestic labour tends to be inversely related to economic and political power, with women who lack employment-based bargaining power still doing most of it with little recognition. The correspondence between different types of work and relevant informal learning activities should also vary according to how much discretionary control people can exercise over the work. Since people are not generally compelled to do community volunteer work, relevant informal learning activities may be more closely associated with involvement in this sort of work than either hierarchically structured employment or necessary domestic labour. As noted above, household and community volunteer labours and their relations with learning activities will only be examined briefly in this report. But future studies of work and learning should attend much more fully to

their significance.

From this interactive perspective on work and learning relations, the correspondence between knowledge attainments and designated work requirements will differ markedly by social position, with the greatest discrepancies experienced by those with the least economic or political power to define the appropriate requirements for their jobs or prospective jobs. We should expect to find higher levels of underutilization of their working knowledge among those in lower occupational positions, as well as among those whose general subordination in society has put them at a disadvantage in labour market negotiations, especially younger people, ethnic and racial minorities and women. While the major objective of this report is to establish general profiles of work statuses and adult learning practices, the data also provide an exceptional opportunity to test these hypothesized relationships.

Whatever interpretive perspectives we may prefer, our major objective should be to empirically assess actual relations between learning and work. Approaches that simply assume either inevitable benefits from further investment in human capital and a lifelong learning culture or pervasive demands for greater skills from a knowledge-based economy are likely to be poor guides to social policy making.

The main questions that guide this research are as follows:

- To what extent have the skill demands and distributions of work changed in Canada over the past generation and has there been a distinctive shift to a "knowledge-based economy"?
- How has participation in learning activities altered over the same period and is Canada now a "learning society"?
- How well matched are Canadians' employment statuses and their learning achievements and are there now significant levels of either underemployment or underqualification?
- What are the main barriers to equitable access to educational certification in the active labour force?
- What are the most likely educational and economic reforms to enhance relations between work and learning in the Canadian labour force today?

Computers and the "Information Age"

The most obvious basis for increasing characterization of the last generation of the 20th century as the beginning of the "information age" may be found in the rapid proliferation of information technologies that provide quicker and easier access to more diverse arrays of data, information and knowledge. The diffusion of information technology via personal computers and the Internet has been extraordinary in recent years. In 1989, less than 20 percent of Canadian homes owned a computer (Lowe, 1992, p. 83). The proportion jumped to 40 percent in 1997 and 45 percent in 1998 (Statistics Canada, December 13, 1999). A publicly accessible electronic information exchange network, the Internet, was only created a decade ago. But Internet access from home leapt from 17 percent in 1997 to 25 percent in 1998 alone (Statistics Canada, December 13, 1999). While less than 30 percent of Canadian households had at least one regular Internet user in 1997, by late 1999 this figure had increased to about 42 percent, including both home users and those who gained access from paid work sites, schools, libraries, homes of friends or Internet cafes (Statistics Canada, May 19, 2000). The proportion of Canadian adults with Internet access from home, employment, school or elsewhere increased from 55 percent in mid-1999 to 70 percent in mid-2000 (Angus Reid, 2000). A majority of Canadian adults now probably have access to both home computers and the Internet. Many prior information technologies—including motion pictures, radio and television—have been rapidly diffused in advanced capitalist societies. The impact of new technologies on knowledge acquisition has typically been wildly exaggerated (see Cuban, 1986; Livingstone, 1997b) and there may already be a growing number of Internet dropouts (Katz and Aspden, 1998). But the combination of personal computers and the Internet provide a more interactive and dynamic mode of knowledge acquisition than any of these prior information technologies. The vast majority of Internet users indicate that it has already had a significant impact on their lives, most frequently by making them more knowledgeable through access to a variety of information sources (Angus Reid, 2000).

The diffusion of home computers has been extremely uneven across economic groups. About three-quarters of the households in the highest income quintile had computers in 1998 compared with

less than 20 percent of those in the lowest quintile (Statistics Canada, December 13, 1999). This difference is the basis for justifiably growing social concern about a "digital divide" among Canadians (Reddick, Boucher and Goseilliers, 2000). But capability to use computers and general access are much more widely distributed. Even in 1989, when less than a fifth of all households owned a computer, nearly half of the entire adult population were able to use a computer and about a third had taken a computer course (Lowe, 1992, p. 71). Both the diffusion of home computers and the development of basic computer literacy have continued to increase rapidly (Angus Reid, 2000).

Most indications are that Canadians have continued to acquire computer skills to a greater extent than they have had opportunities to apply them in paid workplaces. According to GSS surveys, by 1989 around a third of the labour force were using computers for some tasks in their paid workplaces, and by 1994 the proportion had increased to 48 percent (Lowe, 1996). But considerably more workers have acquired the knowledge to use computers than have had the opportunity to use them in their paid workplaces. According to the GSS, in 1989 when 35 percent of Canadian workers were actually using computers in their jobs, 59 percent had the ability to perform work-related computer applications; by 1994, when 48 percent of all workers used computers in their jobs, computer literacy had increased to 68 percent of the employed workforce (Lowe, 2000, p. 75). Similarly, while 70 percent of adults now have some form of Internet access, net users are much more likely to say that they use it to acquire general knowledge, for entertainment, personal communications and financial transactions than to improve their job performance (Dickinson and Sciadas, 1999; Angus Reid, 2000). We will examine this apparent discrepancy between knowledge acquisition and use on the job more generally in Chapter 3, after we look more closely at the actual distribution of Canadians' current paid and unpaid work and then their work-related learning practices in the next two chapters.

Chapter Outlines

In Chapter 1, the "knowledge-based economy" thesis is assessed and recent patterns of change in the paid and unpaid work of Canadians are summarized. Profiles of current major employment statuses of the entire adult Canadian population and their levels of participation in paid employment, household work and community volunteer work are provided. Changes in the polarization of paid work time and redistribution of paid and unpaid work appear to be occurring more rapidly than any increase in the knowledge content of jobs.

Chapter 2 offers general profiles of the learning activities of Canadian adults, including levels of formal school attainment, participation in further non-formal education and training courses, and incidence and topical foci of intentional informal learning. Primary attention is devoted to patterns of employment-related adult education and informal learning. Extensive involvement in intentional informal learning is found across all levels of initial schooling and participation in non-formal education courses. Canada is deemed to already be a learning society on most reasonable criteria.

Chapter 3 analyzes the relations between different types of work and learning. Profiles of employment-related training courses/workshops and informal learning activities are presented for those in all employment statuses. The incidence and content emphases of both training courses and informal learning among occupational groups are given special attention. The existence of extensive underemployment is documented. The effects of current mismatches between job holders' qualifications and job requirements on their continuing learning activities are assessed. The employment-related training and informal learning of the officially unemployed and discouraged workers are also examined.. The most general finding is that, regardless of employment status and even if they are underemployed, most Canadians are actively engaged in continuing employment-related informal learning.

In Chapter 4, patterns of employment-related training and informal learning are analyzed according to socio-demographic and specific contextual factors. There continue to be serious social systemic and material constraints limiting participation in adult education. But informal learning is very extensive throughout the life course. A notable finding here is that while older workers are much less likely to take training courses, they are almost as highly involved in continuing employment-related informal learning as younger workers. Lifelong learning is already a reality for the Canadian labour force and there is widespread popular interest in recognizing prior informal learning for entry to organized education programs.

In the Conclusion, the major findings are briefly summarized. Some important implications for economic and training policies are addressed. Measures to reduce persistent barriers to fuller participation in adult education courses should be implemented. These include more flexible course scheduling, tuition fee subsidies, child care provisions, PLAR, and more responsive curriculum development. But government and private sector employment policies must more fully recognize the extensiveness of current adult learning activities and put relatively higher priority on strategies of work-time redistribution and workplace democratization to create more fulfilling jobs that permit greater use of this knowledge, rather than merely providing more training programs per se. The conclusion also includes appeals for more inclusive conceptions of "human capital", inclusion of informal learning in continuing surveys of learning activities of the labour force, increased public awareness that we already live in a "learning society" and a call for a national forum on economic reforms to address the growing problem of underemployment. .

CHAPTER ONE THE EMERGENCE OF A KNOWLEDGE-BASED ECONOMY AND THE REDISTRIBUTION OF PAID AND UNPAID WORK

Most observers agree that there have been very significant changes in the Canadian economy over the past thirty or forty years. These include:

- the shift from goods producing jobs to service sector jobs and the greater growth of managerial and knowledge-based professions and semi-professions;
- greatly increasing female labour force participation so that the majority of women are now in the labour force and the majority of women with pre-school children are also in full-time employment;
- increasing proportions of temporary and part-time jobs, particularly involuntary part-time jobs, with relatively low benefits or economic security compared to the post-WWII standard of a full-time, long-term position with a given employer;
- increasing use of computer-based technologies in work processes, particularly for integration/control and processing/assembly functions, leading not only to creation of new information management, programming and data processing jobs but elimination of many clerical occupations;
- in contrast to the traditional two-stage "school to work" model, many young people are now combining school and work, either because they are staying in school longer and need employment income to afford the costs or because they are returning to complete or upgrade educational credentials once they get out in the job market.[4]

All of these trends have exhibited uneven rather than linear patterns in response to the intensity of enterprise competition, the supply and organizational strength of labour, and the availability of labour-saving work techniques. These long-established relationships continue to make capitalism far more dynamic and prolific than any prior mode of production and animate the more specific changes that some analysts regard as a rapid transformation to a different kind of "knowledge-based economy". As noted in the Introduction, the recent proliferation of information technology has been very rapid in Canada. But this technology has not produced a radical shift in the organizing principles of industrial societies or in the direction in which they have been moving, just a greater range and intensity of their applications (see Kumar, 1995; Livingstone, 1999a).

This chapter briefly reviews the limited evidence for the emergence of a "knowledge-based economy" and then examines aspects of work in Canada that have actually exhibited more substantial recent shifts--the distribution of paid employment as well as the distribution of unpaid housework and community volunteer work.

Gradual Emergence of a Knowledge-Based Economy

Many recent observers have celebrated the arrival of a fundamentally new "post-industrial" or "knowledge-based economy" (KBE). Advocates of KBE generally assume the centrality of occupations requiring advanced cognitive skills in management and technical design work as well as a general imperative upgrading of the skills needed for all types of employment (Bell, 1973; Reich, 1991). The

direct evidence presented to demonstrate the KBE typically has been limited to showing the increasing prevalence of service sectors over primary extractive and secondary manufacturing industries, and allusions to rapid growth of specific occupations such as computer analysts. KBE advocates have not identified specific thresholds for its realization but there is usually a strong implication of the prevalence of knowledge workers engaged in complex planning and design work. A recent census-based analysis of occupational distributions over the 1971-96 period (Lavoie and Roy, 1998) provides one of the most thorough estimates to date of the actual extent of movement toward KBE. As Table 1.1 summarizes, there have been significant changes over this period in both the absolute numbers of Canadians in each occupational category primarily because of population

Table 1.1 Employment by Type of Occupation, Canada, 1971-96

OCCUPATION	1971 (%)	1996 (%)	1971-1996 Growth Rate (%)
Knowledge	5.3	8.5	4.1
Pure science	0.3	0.4	2.9
Applied science	0.7	0.8	2.7
Engineering	1.2	1.4	3.0
Computer science	0.3	1.3	8.3
Social sciences / Humanities	2.8	4.6	4.2
Management	2.7	10.0	7.6
Science & technology	0.2	1.0	8.4
Other	2.5	9.0	7.6
Data processing	36.2	36.9	2.2
Services	14.5	16.1	2.6
Goods	41.3	28.5	0.6
TOTAL employment (000)	8,103	13,769	2.1%

Source: Lavoie and Roy, 1998, Table 1, p. 16. The 1971 and 1996 percentage distributions have been calculated from the absolute numbers provided in this table.

growth, and the redistribution of jobs from goods production to services, data processing and especially management and knowledge work. The proportion of people in management occupations has nearly quadrupled to 10 percent of the labour force. But, those in knowledge-based occupations involving mainly the generation of ideas or provision of expert opinion-- such as scientists, engineers, and artists-- remain a very small proportion of the entire employment picture; in spite of fairly rapid growth over this period, knowledge workers still made up less than 10 percent of the labour force in 1996. While details of this occupational classification may be disputed, it is clear that the vast majority of the Canadian labour force continues to be employed in jobs that require fairly routinized transmission of data, processing of goods or provision of personal services. As the authors of this report themselves conclude (Lavoie and Roy, 1998, p. 15): "Based on this one-time snapshot of employment it is rather difficult to make the case that Canada has become a knowledge-based economy."

The rate of change in the skill requirements of the Canadian job structure is illustrated in Table 1.2.. On the basis of an extensive analysis of census data on occupational composition for the 1971-91 period (Leckie, 1996) found a general trend to gradual skill upgrading during this period. On measures of the general educational development (GED) required for jobs, the

BEST COPY AVAILABLE

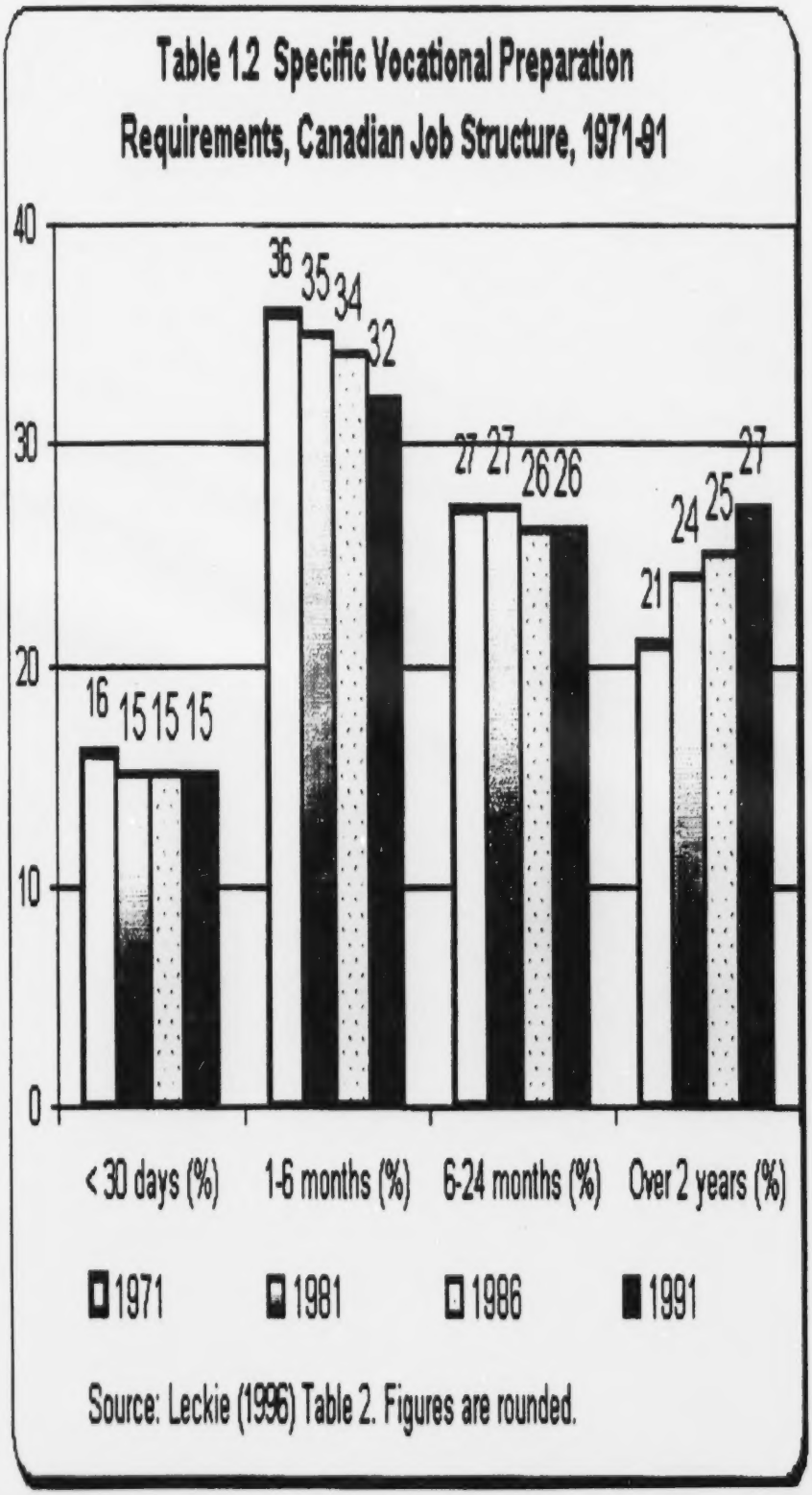


Table 1.2 Specific Vocational Preparation Requirements, Canadian Job Structure, 1971-91
40
30
20
10
0
16 15 15 15
36 35 34 32
27 27 26 26
21 24 25 27
< 30 days (%)
1-6 months (%)
6-24 months (%)
Over 2 years (%)
1971
1981
1986
1991
Source: Leckie (1996) Table 2. Figures are rounded.

length of specific vocational preparation (SVP) needed to perform the job adequately, and the levels of cognitive complexity, task diversity and responsibility in job descriptions, this analysis consistently found gradually declining proportions of the lowest skilled jobs and comparable increases in the highest skilled jobs, resulting in net skill increases of around 10 percent over this entire 20 year period. Other Canadian and international analyses based on large-scale surveys for the post-WWII era (see Livingstone, 1999a for detailed reviews) generally confirm this pattern of gradual skill upgrading. The most recent thorough empirical assessments of skill changes in the U.S.-- which was the original source of claims about the shift to a knowledge-based economy-- have also found little evidence for more than a gradual increase in job skill requirements either in the entire post WWII period or in very recent trends (Barton, 2000; Handel, 2000). The weight of empirical evidence clearly indicates substantially less skill upgrading than the heralds of the knowledge-based economy typically assume. Future discussions of increasing demand for more highly skilled knowledge workers should pay at least as much attention to the slower growing forest of routine data transmitting, service providing and goods processing jobs as to the faster growing knowledge work trees.

Nevertheless, from the standpoint of those in the current Canadian labour force, recent changes in conditions of employment have been exceptionally disruptive and challenging. While the rapid introduction of information technology in paid workplaces may not have led to very rapid aggregate increase in required skill levels, it has been associated with extensive modification of job types and restructuring of job tasks (see Advisory Committee on the Changing Workplace, 1997; Betcherman and Lowe, 1997; Statistics Canada, 1998). In the remainder of this chapter, I will provide aggregate profiles of the basic employment patterns and unpaid work activities of Canadians in what we can loosely call the emergent "information age".

Current Employment Statuses

The most basic way to examine people's involvement in work is to consider the amount of time they spend doing it. Paid employment is clearly the form of work that most people are "preoccupied" with in capitalist societies. Employment statuses also strongly influence how we spend the rest of our time outside paid employment. Recent estimates of the current distribution of general employment statuses among Canadian adults are summarized in Table 1.3, based on the amount of time people devote to employment. This includes those who are excluded from paid employment and those who combine employment with student statuses. The data from the 1997 AETS survey are more accurate because of a much larger sample size but are supplemented by the NALL data which provide distinctions not available from the AETS survey among those who are not currently employed.[5]

According to both of these surveys and numerous others, about 60 percent of the adult population is now engaged in some form of paid employment. This participation rate has been increasing throughout the post-WWII period as women have been drawn increasingly into paid work, more than offsetting the declining participation of men. Around two-thirds of men are now engaged in paid work while more than half of women are. This includes the majority of women with pre-school aged children. According to the NALL survey, even among current women homemakers, the majority have previously had paid employment, and about a quarter are either looking for paid work or expect to do so within the next year.

Along with these profound shifts away from exclusive unpaid homemaker roles, most other employment statuses have also become more fluid. The most important of these for our purposes is the adult student, people beyond compulsory schooling age who are now enrolled in credential-granting post-compulsory educational programs. Over 10 percent of all adults now have some form of student status. Most of these are young people trying to attain college diplomas or university degrees. But increasingly mature students of virtually all ages are combining their studies with employment. Around half of current students over 18 are actively combining either full or part-time employment with either full or part-time studies, and even most students who are not currently employed are either looking for paid work or expect to have to do so before they complete their studies. The transition from school to work is no longer a simple two-stage process.

Table 1.3 Employment Statuses, Canadian Adults, 1997-98

EMPLOYMENT STATUS	1997 (%)	1998 (%)
Employed FT	46.4	45.7
Employed PT	8.5	7.6
Employed FT, Student FT	0.3	1.0
Employed FT, Student PT	1.3	3.0
Employed PT, Student FT	3.0	2.5
Employed PT, Student PT	0.4	1.6
Total Employed	59.9	61.4
Nonemployed FT student	5.3	1.8
Nonemployed PT student	0.5	0.7
Active unemployed	5.4	3.2
Discouraged unemployed	N/A	4.8
Homemaker	N/A	4.9
Retired	N/A	19.3
Off work	N/A	1.0
Permanently disabled	N/A	1.3
Other	28.9	1.6
Total not employed	40.1	38.6
TOTAL N	33410	1565

Sources: 1997: 1998 Adult Education and Training Survey special tabulation [17+population] / NALL (1999) [18+ population].

Among the roughly 40 percent of the adult population who are not employed, about half are retired. The retired proportion is currently growing both because declining birth rates and increasing longevity are producing an aging general population and because of an increasing incidence of both voluntary and involuntary early retirements. But even retirement is not necessarily a permanent status. In the NALL survey, over 10 percent of the currently retired indicate they expect to look for paid work in the next year.

Unemployment rates have fluctuated upward through the post-WWII era. Even in periods of relatively rapid job creation, the official unemployment rate now only declines slowly below 7 percent of the active labour force. Of course, many thousands of Canadians are glad that the official unemployment rate has declined slightly during the past few years. The most notable feature of this increased employment has been the move of people from unemployment and self-employment to wage and salary jobs in private sector firms. The much ballyhooed emergence of a new entrepreneurial economy of the self-employed in the 1990s is now revealed as a coping strategy in a very tight job market. But before we celebrate a sustainable decline in unemployment, consider why the official rate continues to be stuck at just under seven cent in spite of substantial recent job creation.

"Discouraged workers" who had previously given up active pursuit of jobs because their search experience told them none were available, have been moving back into the job market. According to Statistics Canada (1999, Sept 21), discouraged workers, defined quite narrowly in terms of those who wanted work but did not look and those who were waiting to start new jobs, constituted more than one percent of the eligible workforce beyond the official unemployment rate in 1998. The NALL survey is consistent with AETS and other Statistics Canada surveys in finding about 40 percent of Canadian adults in the non-employed population in 1998. But we find a much larger proportion of discouraged workers, defined more inclusively as those adults who are not employed, identify themselves as having an occupation and are neither full-time homemakers, retired, permanently disabled or students. By this criterion, discouraged workers may make up more than four percent of the adult population, or more than seven percent of the currently employed labour force. While precise estimates of interest in employment are very difficult to make, there may now be more people outside the officially recognized active labour force who want paid employment but are not actively looking for it than the number who are actively looking and therefore are counted in the official unemployment rate.

BEST COPY AVAILABLE

According to the NALL survey, the vast majority of the currently non-employed have had employment experience and around a quarter of currently discouraged workers expect to actively look for work in the next year. Even though discouraged worker status may well be the most rapidly changing of all in response to labour market cycles, the persistent marginalization of large numbers of potential workers from the job market should be a cause for concern. In the words of one such discouraged worker who needs a full-time job to support a family: "I have had no sense of dignity for a long time. I feel as if there isn't room for people like me in this country anymore. I don't want much—just to work and make enough to be self-sufficient. I am good at what I do. I want a job. What has gone wrong?" (Livingstone, 1999a, p. 102). There is little indication here of the general trend toward a "leisure society" characterized by growing disinterest in paid work that some social analysts have been predicting over the past few generations. There is, however, a very substantial continuing reserve army of labour ready to overcome their discouragement in various economic dependency statuses to actively seek employment if and when they perceive real job prospects.

Among those who are currently employed, about 80 percent are engaged full-time, 30 hours or more per week. But the proportions in part-time and temporary positions have grown quite rapidly. According to Table 1.2 and other recent labour force surveys, part-time employment now represents around 20 percent of all employment. In 1976, the figure was 12 percent. Even more significantly, the rate of involuntary part-time employment—those who would prefer to have full-time jobs—tripled in this period to over a third of part-timers (Betcherman et al. 1998, p. 33). Similarly, the proportion of temporary jobs has increased rapidly in recent years. The proportion of casual, seasonal and contract jobs was less than 10 percent in 1989 according to the GSS survey (Gibb-Clark, 1997). According to the NALL survey, nearly 20 percent of all jobs are now regarded as temporary by employees, including around 40 percent of part-time and over 10 percent of full-time jobs. Many enterprises now sell the services of temporary workers to other employers. While majorities of both full-time and part-time workers continue to regard their jobs as "permanent" any sense of permanency is becoming much less secure than that of most of their parents. This growing insecurity is probably a greater incentive to skill upgrading than the prospect of more knowledge-based jobs.

Paid and Unpaid Work Time

The identification of work with paid employment that prevailed in public discourse through most of the past century in industrial societies has been seriously challenged as the division of household labour has become a more contested terrain between men and women and participation in unpaid work to sustain communities has become more a matter of voluntary choice than universal necessity. It is increasingly evident that the time that adults of both sexes have to engage in learning activities should be understood in the context of their commitments to these unpaid labours as well as to paid employment.

Between 1961 and 1986, one-earner couples dropped very rapidly from 65 percent to 12 percent of all Canadian families (Myles, 1991). As women have entered the paid labour force in greater numbers and gained greater economic and political bargaining power, the unpaid domestic labour that was previously hidden in the household and devalued as "women's work" has become more of an area of negotiation between household partners and its economic value has increasingly been recognized. For example, Statistics Canada (Jackson, 1994) estimated that the monetarized value of household work in 1992 was between 31 and 46 percent of the gross domestic Product (GDP) of Canada. Statistics Canada has been a world leader in the field of measuring the volume and value of unpaid work done in both the home and the community (Macredie and Sewell, 1998). The best source is the General Social Survey (GSS) which has focussed on time use as its core content in 1986, 1992 and 1998. The 1998 GSS offers the most detailed measures of household work, including estimates of time spent in cooking/ washing up, housekeeping, maintenance and repair, other household work, shopping for goods and services, and child care. While accurate trend analyses of unpaid work time still require refinement, it is clear that, as women increasingly entered paid work between 1986 and 1992, the amount of time devoted to unpaid household work declined because women had less time available to do it and men only marginally increased their "helping out" activities in the home (Fredericks, 1993; Status of Women Canada, 1997). Preliminary comparisons for the 1992-98 period using GSS data suggest that gender inequalities in aggregate paid employment and unpaid housework time continue to decline slowly (Statistics Canada, 1999b).

Volunteer community work includes both participating in community organizations (through such activities as supervising events, fundraising, serving on a board, or providing numerous other support services) and helping and supporting other non-household relatives and other people on one's own (through driving to appointments, babysitting, finding information or assisting sick or elderly people). Perhaps partly because the discretionary time available for volunteer community work has become scarcer as women have devoted more time to paid work, unpaid community work has also increasingly been recognized by some researchers as vital, not only to the reproduction of community life but to societal economic success through the creation of "social capital" (see Putnam, 1991). The only roughly comparable trend data available from the 1987 and 1997 national surveys of volunteering suggest that the proportion of Canadians participating in volunteer community work has increased but the average amount of time devoted has declined during this period. The more recent survey finds that around a third of Canadian adults are participating in community organizations while around 70 percent are involved more generally in helping others (Hall et al, 1998).

The 1998 GSS survey provides the best recent comparative estimates of the time Canadians devote to paid work, household work and volunteer community work. The basic findings are summarized in Table 1.4.

Table 1.4 Paid Work, Household Work and Community Volunteer Work Time by Sex, Canada, 1998

TYPE OF WORK	Men (hrs/wk)	Women (hrs/wk)	Both (hrs/wk)
Paid work	28.7	17.5	23.1
Household work	16.8	28.7	22.4
Volunteer work	2.1	2.8	2.8
Total work	47.6	49.0	48.3
TOTAL N	4856	5893	10749

Sources: 1998 General Social Survey special tabulation (1998) [population 15+].

While it is likely than substantial portions of unpaid work remain hidden in both the household and community because people continue to regard them as intrinsic parts of everyday life rather than "work" (Macredie and Sewell, 1998, p. 8), both men and women in Canada today are probably putting in an average of nearly 50 hours of paid and unpaid work per week. This is very close to current estimates in a U.S. time series survey which has found significant increases from 40 hours in 1973 to 50 hours in 1993 but little change since then in self-reported hours of work (Harris Poll, 1999). Community volunteer work appears to be shared fairly equally between the sexes, but averages only a few hours per week. Men still do most of the paid work and women do most of the unpaid housework. But, in spite of the likely underestimates of unpaid work, the GSS survey has generally found that women are doing somewhat more total hours of work than men in Canadian society: 7 percent more in 1986, 8 percent more in 1992, and 3 percent more in 1998 (Status of Women Canada, 1997; Statistics Canada 1999b). According to GSS estimates, in 1986, women did 53 percent as much paid work as men and 216 percent as much unpaid work; in 1992, women did 60 percent as much paid work and 173 percent as much unpaid work; in 1998, women did 61 percent as much paid work and 167 percent as much unpaid work, (Status of Women Canada, 1997, p. 27; Statistics Canada, 1999b, p. 5). As women increase their participation in paid work, the sex difference in unpaid work has tended to decline largely because women are doing less of it under the demands of paid work.

Other insights about work time emerge if we examine its distribution by different employment statuses. Table 1.5 summarizes the basic patterns according to the NALL survey. It should be noted that the NALL survey significantly underestimates housework time because it was only able to ask one question while the GSS survey provided detailed items on different household tasks. The NALL survey therefore gives lower estimates of total work time than the GSS survey. But the general patterns in the NALL survey are very similar to those in comparable statuses in the GSS surveys and the NALL survey permits finer distinctions among the unemployed and student groups. In all surveys, those men and women employed full-time consistently do more total work than any other general employment status, both averaging around 60 hours per week. In all other employment statuses, women clearly do more

BEST COPY AVAILABLE

work than men because of their predominance in housework. In fact, according to the more accurate household work estimates in the 1998 GSS survey, women homemakers with children at home also average nearly 60 hours per week in unpaid housework and volunteer activities (Statistics Canada, 1999b, p. 14). Men who are employed part-time do not do significantly more housework than men employed full-time.

Table 1.5 Employment Status by Average Paid and Unpaid Work Time for Men and Women, Canada, 1998

EMPLOYMENT STATUS/SEX		Paid work (hrs/wk)	Household work (hrs/wk)	Community work (hrs/wk)	Total work (hrs/wk)
Employed FT	M	44.1	10.3	2.3	56.6
	F	38.4	16.3	2.3	57.1
Employed PT	M	22.0	10.3	4.2	36.4
	F	20.3	21.9	2.4	44.6
Student employed FT	M	43.6	7.1	3.1	53.8
	F	36.1	14.9	2.3	53.2
Student employed PT	M	18.0	7.0	4.6	29.6
	F	18.2	14.5	3.7	36.4
Non-employed student	M	0.0	7.2	2.7	9.9
	F	0.0	15.6	2.8	18.4
Active unemployed	M	0.0	16.2	2.2	18.5
	F	0.0	21.4	2.1	23.4
Discouraged unemployed	M	0.0	15.5	3.2	18.7
	F	0.0	24.4	4.4	28.7
*Homemaker**	M				
	F	0.0	28.6	2.7	31.3
Retired	M	0.0	12.3	1.7	14.0
	F	0.0	21.1	2.9	24.0
Other	M	0.0	11.1	1.3	12.4
	F	0.0	13.6	1.7	15.3
TOTAL	M	29.5	10.7	2.4	42.6
	F	16.7	19.5	2.7	38.9

Source: NALL (1999). [18+ population] N = 1565.
*Number of cases too small for reliable estimate

Retired people continue to do a very substantial amount of unpaid work But, even without the constraints of paid employment, retired women still do about twice as much housework as retired men. Men who are unemployed do tend to take up more housework, although rarely as much as unemployed women or homemakers. The unemployed are generally devoting over 20 hours a week to unpaid work and continue to do at least as much community volunteer work as other people. There are major differences in total work time among the students groups, attributable both to paid work differences and a general tendency for students to perform relatively little housework. Female and male students who are employed full-time do three to five times as much work as non-employed students, who presumably have much more discretionary time to devote to their studies. People in virtually all non-employed statuses except students tend to do more housework than those in full-time employment. The performance of a few hours of community volunteer work per week is common in virtually all employment statuses. Most Canadian adults and especially those not employed full-time are doing a lot of unpaid work.

Employment Hours and Time Crunch

The dissemination of labour-saving technologies generates the possibility of reduced work time. Through most of the past century, average employment hours declined very significantly. The normal work week in Canadian manufacturing dropped from 60 hours in 1900.to around 40 hours in 1960 as working conditions negotiated by unions and employers were translated into legislated standards

BEST COPY AVAILABLE

(Advisory Group on Working Time and the Distribution of Work, 1994, p. 13). But since the 1960s, reductions in the average paid work week have been minimal. The weight of Canadian and international evidence now suggests that total paid and unpaid work time has increased significantly over the past thirty years as has the polarization of hours of paid work (see Schor, 1991). The origin of the "good jobs/bad jobs" structure of this polarization trend in the service sector was well documented a decade ago in an Economic Council of Canada (1990) report.

As Table 1.6 summarizes, those employed under 20 hours per week and those employed over 50 hours a week each constituted about 12 percent of the active labour force in 1997. Both polar groups roughly doubled since the mid-1970s, while the proportion employed for 40 hours a week dropped from about half to around a third. About a fifth of the employed workforce are now regularly working overtime, most of it without extra pay (Theobald, 1997). At the same time, if we consider not only those

Table 1.6 Usual Weekly Paid Work Hours, Canada, 1976-97

YEAR	< 20 hrs (%)	20-29 hrs (%)	30-39 hrs (%)	40 hrs (%)	41-49 hrs (%)	50+ hrs (%)
1976	7.5	4.6	25.0	49.7	7.1	6.2
1993	10.5	8.3	26.8	40.1	6.4	7.9
1997	12.8	8.9	27.6	34.7	6.9	12.0

Sources: 1976 and 1993:Advisory Group on Working Time and the Distribution of Work (1994, p. 17); 1997: AETS97. All figures are drawn from Statistics Canada Labour Force Surveys.

in involuntary part-time employment (around 7 percent of the active labour force) but the officially unemployed (around 7 percent) and also discouraged workers who may well constitute comparable numbers to the officially unemployed, there may be a similar number of potential participants who are available for more paid work but are unable to obtain it. So we have the paradox of overwork and not enough paid work increasing simultaneously.

Recent Canadian surveys on the employment time preferences of the employed labour force have generally found that a majority want to retain the same number of hours as they now have and that the less hours people are employed, the more hours they want. But there is considerable dispute about work time preferences of the fully employed. The 1985 Survey on Work Reduction (Benimadhu, 1987) , the 1995 Survey on Work Arrangements (Drolet and Morisette, 1997) and the 1998 General Social Survey all have found that full-time workers were much more likely to express a preference for more work with more pay than for fewer hours for less pay. However, when respondents to the 1985 survey were given the choice of fewer hours either for less pay or by foregoing a pay increase, the preference for less hours increased to about a third of the entire employed labour force. In the 1998 NALL survey, as Table 1.7 summarizes, when respondents are given the general choice between being employed more, less or the same number of hours as they now are, about a third of those employed also opt for less paid work time while only around 10 percent want more hours. While over a quarter of those employed less than 30 hours would like more employment hours, a majority of those working more than 40 hours say they would like less hours. So, there appears to be some scope for the redistribution of employment hours from those working long hours to those working short hours, particularly between older and younger workers in similar fields (Drolet and Morisette, 1997, p.14).

Table 1.7 Usual Employment Hours by Preferred Hours, Employed Labour Force, 1998

EMPLOYMENT HOURS	More hours (%)	Same hours (%)	Less hours (%)
1-19 hours	30	59	11
20-29 hours	26	55	19
30-39 hours	14	59	28
40 hours	11	62	28
41-49 hours	5	49	46
50+ hours	7	38	55
TOTAL (%)	14	55	31

Source: NALL (1999). N=951.

BEST COPY AVAILABLE

The polarization of paid work time is reflected in a growing income gap between the very rich and the very poor (Yalnizyan, 1998). But there also appears to be a pervasive sentiment among the majority of middle-income earners that people must be willing to work longer hours to respond to falling real wages, ensure job security and keep up with a rising level of consumption of goods and services. Canadian families on average are spending more aggregate time in paid employment and earning less real income, but spending more of it (Daly, 2000). In reaction to these perceived trends, Canadians report growing feelings of "time crunch" (Fredericks, 1995). Between 1992 and 1998, according to the GSS survey, there were significant increases in many indicators of time stress, and greater time stress was clearly associated with greater total work hours (Statistics Canada, 1999, November 9). Time stress levels are highest among married men and women aged 25 to 44 who are employed full-time with children at home, the people who have the highest total work times. In 1998, 85 percent of these married women and 79 percent of the married men felt that weekdays were too short to accomplish what they wanted, compared to 58 percent and 49 percent, respectively, in 1992 (Fredericks, 1995, p. 31). The highest levels of time stress continue to be expressed by married mothers with full-time employment who have children under 5 at home. As Statistics Canada (1999, November 9, p. 3) puts it, "families are losing in the 'struggle to juggle'". More generally, a growing majority of all Canadians say they are cutting back on their sleep to create more time, while feeling overworked and worrying about not having enough time to spend with family and friends.

Other studies confirm that these time stresses are associated with increasing health problems in the employed workforce. A 1996 Hay Management Consultants survey found that over half of the Canadian labour force cited the pace of work as their most common workplace health problem, that health problems arising from job stress are much more likely than job-related illnesses or injuries, and that about a quarter of all workers reported stress, or mental or emotional health problems arising from their jobs (Dhooma, 1998). Research has increasingly confirmed the important role of stress in multiple diseases and disorders, and workers' compensation awards for job stress-based health problems grew rapidly in the 1990s. Canadians' life expectancies may now be among the highest in the world (Statistics Canada, 2000, March 31). But many Canadians with full-time jobs are now endangering their quality of life through overwork while others increasingly suffer similar health problems through the stresses associated with the indignities of having little or no paid work (cf. Karasek and Theorell, 1990).

In sum, while a knowledge-based economy is emerging only very gradually in response to available information technologies, there have been much more rapid and substantial changes in the structuring and distribution of both paid and unpaid work. The latter changes may prove to be more relevant for understanding Canadians' current efforts to acquire more skill and knowledge.

CHAPTER TWO PROFILES OF ADULT LEARNING: MAPPING THE ICEBERG

Introduction

Scholars have been welcoming the "learning society" since the explosion of enrolments in both post-compulsory schooling and further education courses in the 1960s (Hutchins, 1969; Husen, 1974).. The human species' primary means of coping with environmental change has always been to engage in increased learning activities. The increasing development and use of information technologies in all spheres of human life since 1960 may have encouraged greater knowledge acquisition throughout all age groups to deal with the continuing array of economic, political and cultural changes. As this chapter will document, the growth of adult learning activities in Canada during this period has been quite extraordinary.

The definitions of adult learning used in policy circles have become more inclusive of informal learning during the past decade, as reflected in the OECD Education Ministers' influential statement on "lifelong learning for all" (OECD, 1996). As a subsequent OECD (1998, p. 8) document declares:

> The new approach is a true 'cradle to grave' view. It encompasses all purposeful learning activity undertaken with the aim of improving knowledge, skills and competence. It gives weight to building foundations for lifelong learning as well as to remedial second chances

> for adults. And it recognizes that not only the settings of formal education but also the less formal settings of the home, the workplace, the community and society at large contribute to learning.

This new approach is explicitly driven by the notion that the necessity to create a "learning society" and stimulate greater adult learning efforts is dictated by the requirements of the knowledge-based economy (OECD, 1998, p. 10):

> The lifelong learning approach responds to the needs that have arisen as a result of the structural changes sweeping the OECD countries.... These pressures have significantly increased the importance of the 'knowledge-based economy' as a determinant of social and economic advance.... Lifelong learning offers a credible response to these economic and social pressures.

As documented in Chapter 1, the knowledge-based economy is only slowly emerging. The evidence presented in this chapter suggests that the incidence of adult participation in learning activities has increased much more rapidly. The basic conclusion is that Canada is already a learning society in any reasonable sense of the term, without yet having become a knowledge-based economy.

In spite of more inclusive rhetoric about lifelong learning including non-institutional settings, adult learning still generally tends to be equated in policy analysis with organized education, while informal learning is much less documented and rarely researched either in itself or in relation to adult participation in organized education. Findings from recent Canadian research on informal learning, as well as on formal schooling, non-formal education courses and on the interrelations of all three forms of learning will be summarized here.

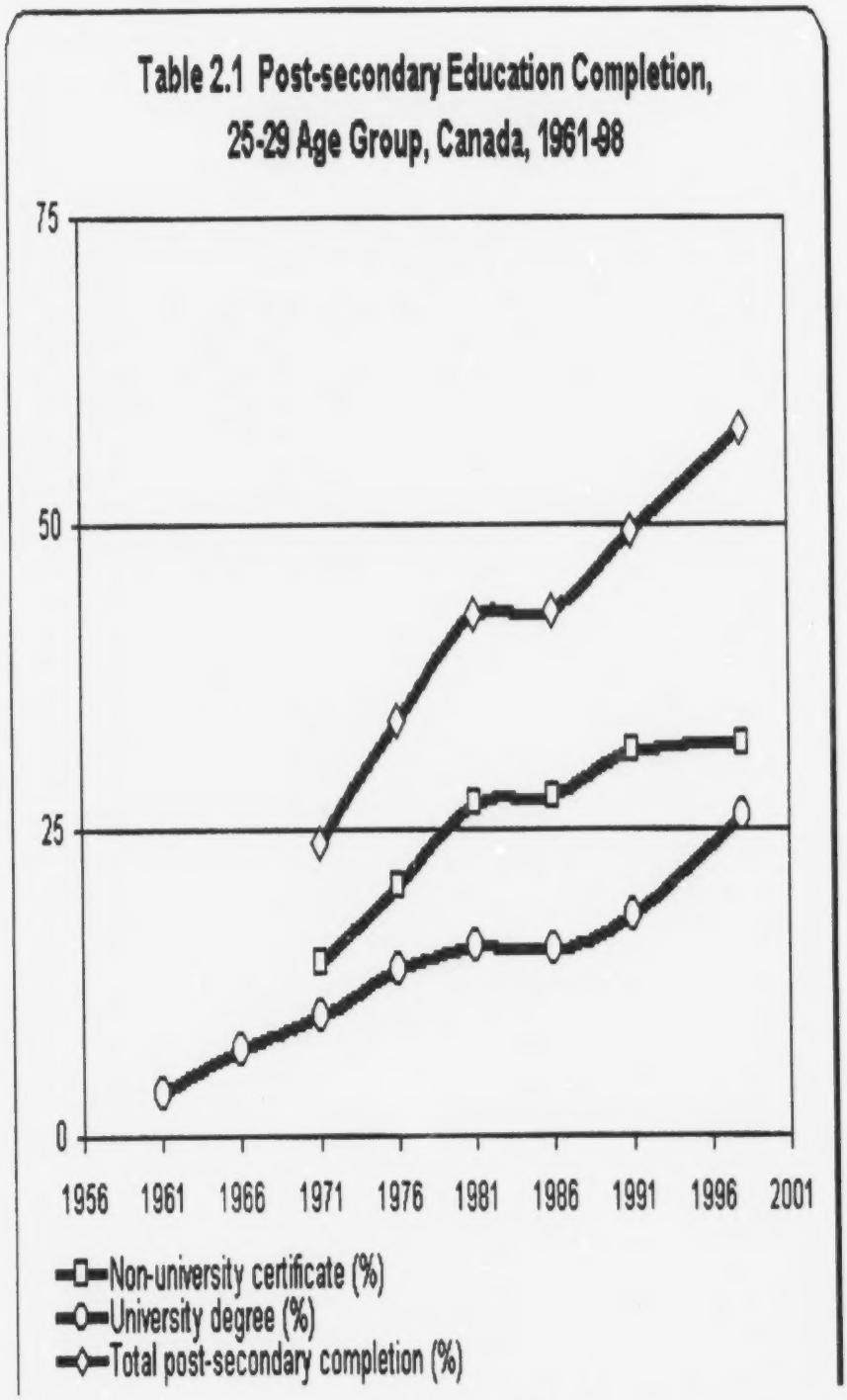
The main data sources for this analysis are the most recent Canadian surveys of participation in adult education and training programs during 1993 and 1997 (Statistics Canada, 1997a, 1999a)—hereafter termed the AETS surveys—and the survey of adult participation in both non-formal education and informal learning activities during 1998 by the research network for New Approaches to Lifelong Learning (NALL, 1999).[6] The main findings are: (1) that participation in schooling and in non-formal adult courses has grown very rapidly between the 1960s and the early 1990s, but more slowly since then; (2) that the incidence of adult informal learning is now much more extensive than adult participation in formal and non-formal education and may have grown significantly in the 1990s; and (3) that participation in formal schooling programs and in non-formal education courses are closely related to each other but not to the incidence of informal learning. The following sections present the evidence, first for participation in organized forms of schooling and adult education, secondly for informal learning, and thirdly for the interrelations among these three forms of learning.

The Growth of Schooling and Non-Formal Education

This section reviews participation in organized education programs and courses, primarily on the basis of comparable official statistics since 1960.

Participation in the post-secondary level of the initial cycle of formal schooling has expanded very rapidly over the past two generations, as Table 2.1 illustrates. The proportion of the 25 to 29 age cohort that had completed a university degree was about 4 percent in 1961. By 1990, the completion rate had quadrupled to 17 percent. The completion rate continued to grow rapidly up to 1998 when 26 percent of this age group had received degrees. The increase in other forms of post-secondary completion, including colleges and trade schools may have been even more dramatic during the 1961-90 period; most comprehensive community colleges were created after 1960. While age-specific estimates for non-university certificates are not readily available prior to the 1970s, around 20 percent of the 25 to 29 cohort had completed some form of non-university certificate by 1976. This rate continued to grow to 27 percent in 1981. Since then it has increased to 32 percent in 1998. So the overall rate of completion of all forms of post-secondary education by the 25-29 cohort grew from probably less than 10 percent to 58 percent during the 1961-98 period. From a small minority, now a growing majority of young Canadians are completing post-secondary schooling. At the other extreme, the proportion with less than a high

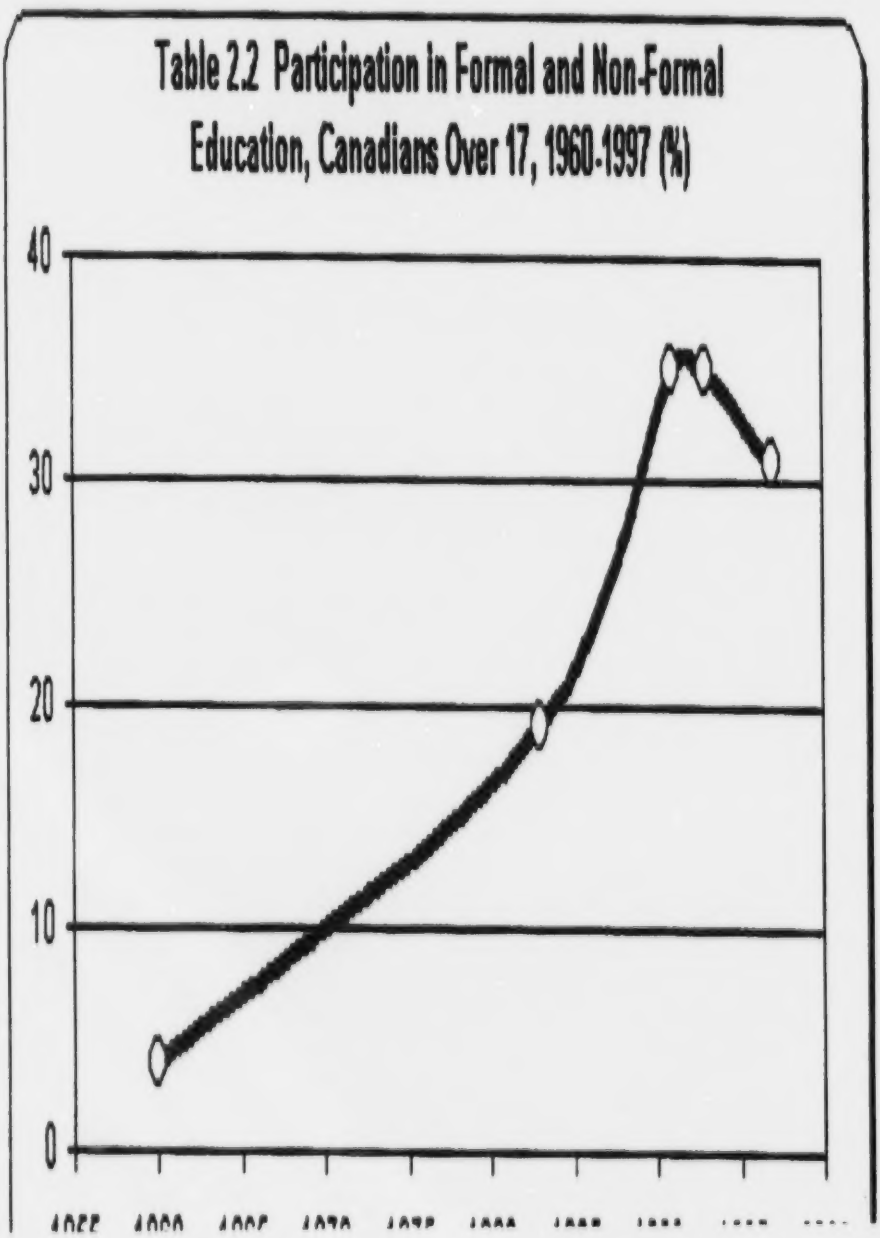
school diploma has dropped from over a third of the 25 to 29 cohort in 1961 to 20 percent in 1990 and only 13 percent in 1998 (Dominion Bureau of Statistics, 1965; Statistics Canada, 2000, p.186). By 1996, Canada clearly led the advanced industrial world in the formal educational attainment of its population, with 48 percent of its 25 to 64 population having achieved a post-secondary credential. The previous world leader, the United States, trailed with 34 percent, while the average for all OECD countries was 23 percent (Statistics Canada, 2000, p. 24). The increase in Canadians' formal educational attainments has been extraordinary. Enrolment ratios in the late 1990s indicate continuing increases in educational attainment among youth cohorts. But there are several very important caveats.



First, Canada continues to trail most OECD countries in the provision of early childhood education. Less than half of all 3 to 5 year olds attend pre-elementary programs and there have been only marginal increases over the past decade (Statistics Canada, 2000, p. 37). In light of the massive amount of research documenting the multiple benefits of early participation (e.g. McCain and Mustard, 1999), significant future increases in junior kindergarten programs may be anticipated. Secondly, elementary-secondary level enrolment ratios are approaching universality, with most of those who "stop out" when compulsory attendance ends at 16 now attempting to return to graduate as mature students. So future increases here are likely to be marginal, influenced primarily by variation in re-entry conditions for post-compulsory students (see McKuen, 1998). Thirdly, post-secondary enrolment ratios include both full-time and part-time students, and part-time enrolments especially tend to go up in economic recessions and down in periods of job growth. Between 1980 and the early 1990s, both the participation of the 20 to 24 age cohort and those over 24 doubled (Betcherman et al, 1998b). Larger and larger proportions of each respective age cohort have enrolled in post-compulsory schooling and people from each cohort have been staying longer and coming back more often for advanced credentials. Full-time enrolment of 18 to 21 year olds in college increased from 19 to 25 percent between 1987-88 and 1997-98, while full-time enrolment of 18 to 24 year olds increased from 15 to 20 percent over the same period (Statistics Canada, 2000, pp. 42,46). However, part-time enrolments have been falling since the end of the 1992-93 recession. So, overall, the post-secondary participation rates of youth cohorts have shown little change in recent years. Fourthly, prior general increases in post-secondary enrolment mask persistent and perhaps increasing inequities of access by economic background. Youths from poorer economic origins have always been under-represented in post-secondary institutions. Average student debt loads have more than doubled during the past decade (Statistics Canada, 2000, p. 67), as tuition fees have seen similar increases while average family income has remained the same in real dollar terms. Recent studies indicate that those from low socio-economic status backgrounds were roughly half as likely to be attending university in the late 1990s compared with a decade earlier (Quirke, 2001). Aggregate increases in formal educational attainment have done little to reduce relative educational inequalities by economic origin.

Non-formal education includes a wide variety of courses and workshops based on an organized curriculum and led by an institutionally-authorized instructor, with enrolment typically at the discretion of the student. This can include, for example, courses in job retraining or upgrading, second language training, courses toward completion of a diploma or degree program, as well as a great diversity of general interest courses ranging from accounting processes to zoo-keeping. There have been few Canada-wide surveys of participation in non-formal education. Published reports on the few surveys usually have excluded those adults over 16 still involved in their initial cycle of schooling. They include: adults taking non-credit courses for specific purposes at various locations including schools, paid workplaces and through electronic media; adults who have returned to school part-time to complete certification or upgrade through programs of study; adults who have returned to school full-time if they are supported by their employer; and initial cycle students taking supplementary courses (see Devereaux, 1985; Statistics Canada, 1997a, p. 10). These inclusions and exclusions appear increasingly arbitrary as the initial cycle of formal schooling has extended further into adulthood and young adults have increasingly combined school completion with employment. The transitions between schooling and employment are now both more frequent and more complex (see Thomas, 1993). Many people combine both statuses and it is often unclear which one might be primary at any given time. As Table 1.2 documented, over 10 percent of the adult Canadian population were enrolled in certification-based formal education programs during the 1997-98 period, and around half of these adults were enrolled in these school programs while also engaged in paid employment. The simplest solution is to count all forms of adult participation in organized educational programs.

As Table 2.2 summarizes, surveys have found that adult participation in non-formal education also displayed a very rapid growth pattern from 1960 to the early 1990s. In 1960, according to the first known government survey (Dominion Bureau of Statistics, 1963), only about 4 percent of all Canadians over 17 years of age were estimated to be enrolled in any sort of educational institution course. By the next survey in the early 1980s, about 20 percent were enrolled annually. A decade later, the participation rate had grown to around 35 percent. So, in a little over 30 years, adult educational participation appears to have experienced about a sevenfold rate increase. Whatever criteria are used to distinguish formal and non-formal education during this period, it is clear that adult participation in all forms of education grew very quickly. However, while international comparisons of non-formal education are more difficult because of diverse types and limited data, it does appear that current general levels of participation in Canada still may be exceeded by those in the U.S. and various European countries (Statistics Canada, 1997a).



BEST COPY AVAILABLE

As Table 2.2 also shows, between 1993 and 1997, there seems to have been at least a slight decline in the overall adult education participation rate. As Table 2.3 documents, most of this decline appear to be in personal and recreational courses and in elementary or high school diploma completion programs. Another time series of surveys in Ontario indicates a similar pattern of rapid growth in course participation continuing from the mid-1980s up to the early 1990s followed by a recent decline (Livingstone, Hart and Davie, 1999).[7] Government sources attribute such recent declines to a growth of self-employment which requires less formal learning, a possible increase in specific contextual barriers to educational participation (such as increasing costs), and an increasing disposition among both individuals and employers to opt for more flexible, more informal methods of skill development (Human Resources Development Canada, 2000). In Ontario in particular, more restrictive government funding and the related closure of various adult upgrading programs has led to a sharp drop in enrolment (see McEwen, 1998).

But I should stress here that prior government survey measures of non-formal education may not be sufficiently inclusive to reflect all relevant organized adult education activities. The basic definition of non-formal education incorporates all learning activities beyond compulsory schooling offered with an organized curricula by a designated instructor through any social institution. This includes instructor-led curricula of short duration including workshops and lessons. The standard government survey questions have not mentioned short duration activities, and have therefore probably encouraged an identification with organized courses and discouraged reporting of other non-formal education of short duration. The basic adult education question in the NALL 1998 survey was modelled on the standard AETS question but offered a more generic definition of non-formal education and encouraged inclusion of workshops and lessons of short duration; this question was preceded by numerous questions about respondents' informal learning which may have stimulated identification of a wider array of organized educational activities.[8] Not surprisingly, the NALL survey found a higher level of participation in adult education. About 44 percent of all Canadian adults and about 56 percent of the employed labour force were found to have participated in some form of organized courses in 1998 (see Livingstone, 1999b), figures which are around a third higher than the comparable 1997 AETS survey estimates of 31 percent of all adults and 39 percent of the employed labour force, respectively. A NALL follow-up question, addressed only to the employed

Table 2.3 Participation in Specific Programs and Courses, Canadians Over 17, 1991-97 (%)

	1991 (%)	1993 (%)	1997 (%)
PROGRAMS			
School diploma	4.3	4.5	3.5
Apprenticeship	0.7	0.7	1.1
Trade diploma	2.2	2.2	3.3
College diploma	3.2	3.8	3.6
University degree	4.5	4.9	4.7
All programs	14.3	15.1	13.9
COURSES			
Job-related	16.2	16.1	16.2
Personal/recreation	9.9	10.9	9
All courses	23	23.8	21.5
TOTAL	34.8	34.8	31.4
N	45328	41645	33410

Source: AETS special tabulations.

labour force about their involvement in a series of possible employment-related formal training, courses, workshops or sessions of any duration, found that 66 percent of the currently employed had participated in some sort of non-formal education activity of at least short duration over the past year (see Table 2.11 for a detailed summary), about two-thirds higher than the 1997 AETS estimate. Unfortunately, such more inclusive measures are not available for earlier time periods. But these findings do suggest that adult education practices may be considerably more extensive in Canada than prior general course-based measures comprehend.

Several surveys also provide more detailed estimates of the time devoted to adult education courses. The 1983 government survey found that the average participant received about 60 hours of instruction per year (Devereaux, 1985, p. 43). The AETS surveys have found that the average number of hours per year devoted to course work by participants increased from 140 in 1991 to 209 in 1997, at the same time as the number of adult course participants declined (Human Resources Development Canada, 2000). The First International Adult Literacy Survey (IALS) found that in 1994 Canadian participants were spending an average of 317 hours per year in organized learning activities (Belanger and Valdivielso, 1997, p. 2). The NALL survey asked course participants a more general question about hours in a typical week devoted not only to time in class but to doing homework and course assignments; participants who responded indicated they spent an average of about 10 hours per week on course-related activities in 1997-98. This would amount to a maximum of about 500 hours per year if courses were taken throughout the year-- which is rarely the case. In spite of comparability problems between these different surveys, the results permit two fairly definite conclusions about time devoted to adult education courses. First, there is a recent tendency for fewer adults to spend more time on adult education courses; this appears to reverse the more inclusive participatory trend of the entire post-1960 period and should be carefully scrutinized in future studies. Secondly, if the number of hours devoted to adult education courses is averaged over the entire adult population, it now amounts to no more than 3 to 4 hours per week per person. These estimates will take on greater significance when we examine the incidence of informal learning among Canadian adults.

Whatever survey measures are used to estimate adult participation levels, it is clear that there was an extraordinary growth in institutional provision of educational services for Canadian adults between 1960 and the early 1990s. While the comparable evidence suggests a slight overall decline in general course participation during the mid-1990s, demand for further adult education remains very high. The NALL survey finds that fully half of all Canadian adults would like to take a course in the next few years (Livingstone, 1999b).

The data analysis presented in the remainder of this report relies mainly on the NALL survey because: (1) its measures of participation in non-formal education are more inclusive of all organized adult education activities and slightly more recent than AETS; (2) it provides unique estimates of recent informal learning activities; and (3) it permits related analysis of the schooling, non-formal education

BEST COPY AVAILABLE

and informal learning activities of Canadians. Wherever possible, supplementary analyses of schooling and non-formal education have also been conducted with AETS data.[9]

Canadians' Informal Learning Practices

Informal learning activities are even more difficult to estimate accurately than adult educational participation, including virtually any non-institutionalized learning in which adults choose to engage. Informal learning includes any activity involving the pursuit of understanding, knowledge or skill which occurs beyond the curricula of institutions providing educational programs, courses or workshops. Informal learning may occur in any context beyond institutional curricula. The basic terms of informal learning (e.g. objectives, content, means and processes of acquisition, duration, evaluation of outcomes, applications) are determined by the individuals and groups that choose to engage in it. Informal learning is undertaken on our own, either individually or collectively, without either externally imposed criteria or the presence of an institutionally-authorized instructor. Intentional informal learning is distinguished from more tacit informal learning, as well as from everyday perceptions and general socialization, by peoples' own conscious identification of the activity as significant learning (see Eraut 1999). The most important criterion that distinguishes intentional informal learning is the recognition of a new significant form of knowledge, understanding or skill acquired on your own initiative. The actual number of hours that we allocate informally to gain explicit knowledge, skill or understanding may vary in terms of our circumstances, the amount of concentration we can place on it, our actual learning capacities, and a number of other factors. To study informal learning empirically, we have to focus on those things that people can identify for themselves as actual learning projects or deliberate learning activities beyond educational institutions.

The research on informal learning in the post-WWII era depends heavily on the work of Malcolm Knowles (1970). Knowles basically argued that every individual is involved in continual learning activities and that these activities or projects, which are beyond the realm of institutional control are integral to the constituting of society. This perspective inspired the empirical research on "self-directed learning projects" initiated by Allen Tough (1971, 1978, 1979). This research began in the late 1960s and carried on fairly intensively through the 1970s with a number of studies. Much of the early research was done in Canada, starting with graduate students at OISE who did case studies with various small groups. Large numbers of case studies have now been done to document the self-directed learning activities in which people generally engage (see Adams et al, 1999). Several U.S. surveys of informal learning were conducted, including a 1976 national survey (Penland, 1977; see Livingstone, 1999a, pp. 33-51). At least one national Canadian survey has addressed the content of adults' self-directed learning about social issues (Thomas et al., 1982). The cumulative findings in Canada and internationally in the 1970s were that in the vast majority of social groups-- whether distinguished by gender, age, class, race, ableism or nationality-- the basic amount of time that people were spending on intentional informal learning projects showed very similar distributions. The average number of hours devoted to informal learning of this intentional, recognized sort was estimated to be around 10 hours a week or 500 hours a year (Tough 1978).

This early empirical research on informal learning was criticized for several possible limitations, including tendencies to individualistic, middle class, and leading question biases (see Brookfield, 1981; Livingstone, 1999a,b). But these early studies provide a very useful starting point for further research. We should now be able to generate reliable profiles of the incidence of intentional informal learning and examine its association with organized forms of education more fully than most prior studies. Any adequate assessment of the extent of lifelong learning, and especially the learning of adults beyond their initial cycle of schooling, requires at least some approximation of informal learning.

The 1998 NALL survey of adults' current learning is the first large-scale survey in this country to estimate adults' informal learning. (For further information on the NALL research network and the full interview schedule, see the NALL website:www.nall.ca).We reviewed and borrowed from virtually all prior studies of informal learning that have previously been conducted (see Adams et al, 1999). We did extensive pilot testing with dozens of individuals and groups. The final interview schedule addresses all three basic forms of learning but with a special focus on the diverse aspects of intentional informal learning; a variety of social background factors is also addressed. Readers should be under no illusion

that a survey questionnaire is capable of uncovering the deeper levels of either individual or collective knowledge gained in informal learning practices. In addition, the accuracy of the NALL survey findings must be regarded as tentative until confirmed by further survey and case study research which is now underway.[10]

The NALL survey respondents were first given a definition of informal learning as including anything people do to gain knowledge, skill or understanding, from learning about their health or hobbies, to household tasks or paid work, or anything else that interests them outside of organized courses. They were then asked to indicate their participation in four aspects of informal learning: employment related; community volunteer work related; household work related; and other general interest related. In each aspect, respondents were asked about informal learning activities on several specific themes. The basic findings follow, with reference to prior studies where relevant for comparative purposes.[11]

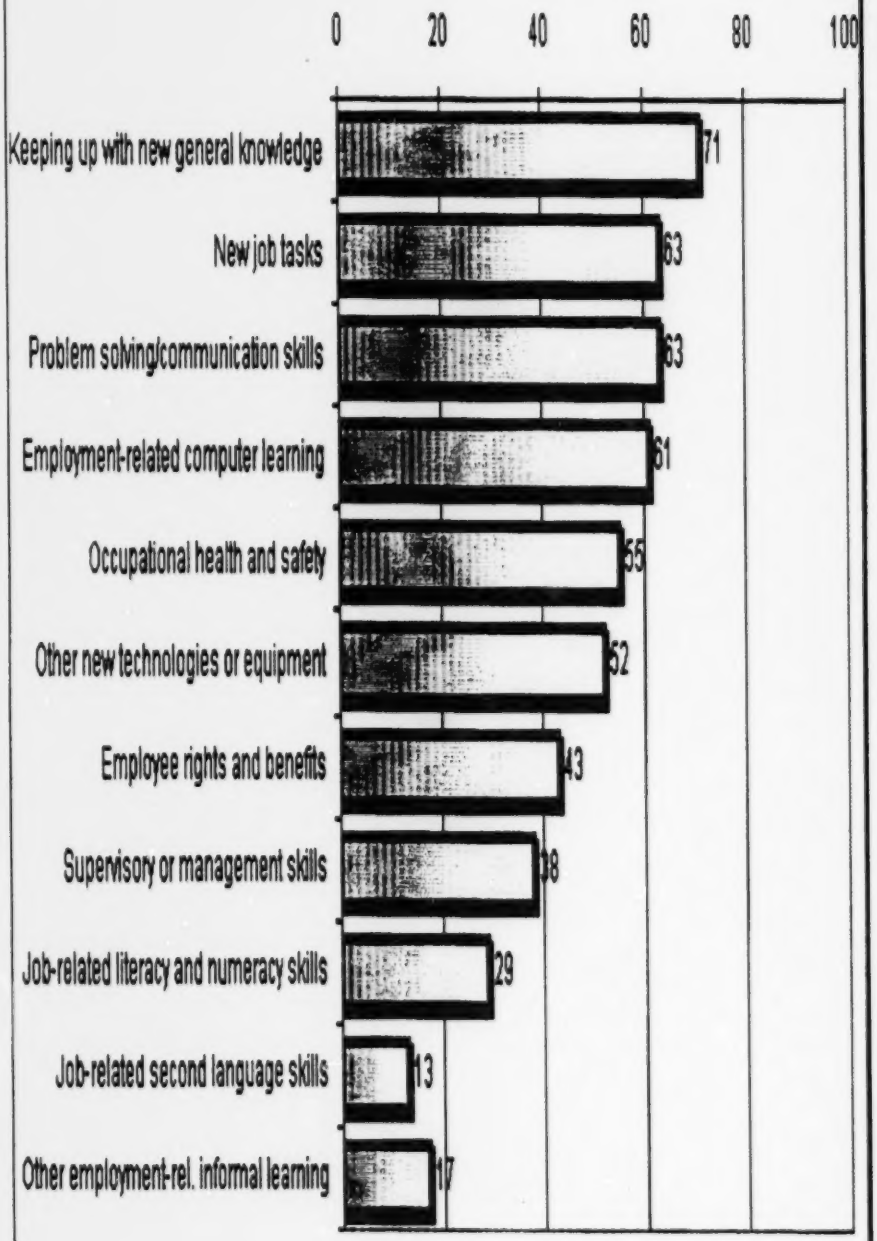
Employment-related Informal Learning

Those in the current labour force (including over 60 percent employed and about 8 percent designated as unemployed) were first asked to identify any informal learning they had done during the past year related to their employment. The basic question was as follows:

> First, let's talk about any informal learning activities outside of courses that have some connection with your current or possible future paid employment. This could have been any learning you did on your own or in groups with co-workers, that is any informal learning you consider to be related to your employment. I'm going to read you a list of some types of informal learning related to employment that people sometimes do outside of formal or organized courses.

Table 2.4 summarizes these employment-related learning activities and the proportion of employed respondents who indicated participating in acquisition of each of a variety of technical skills and practical working knowledge topics.

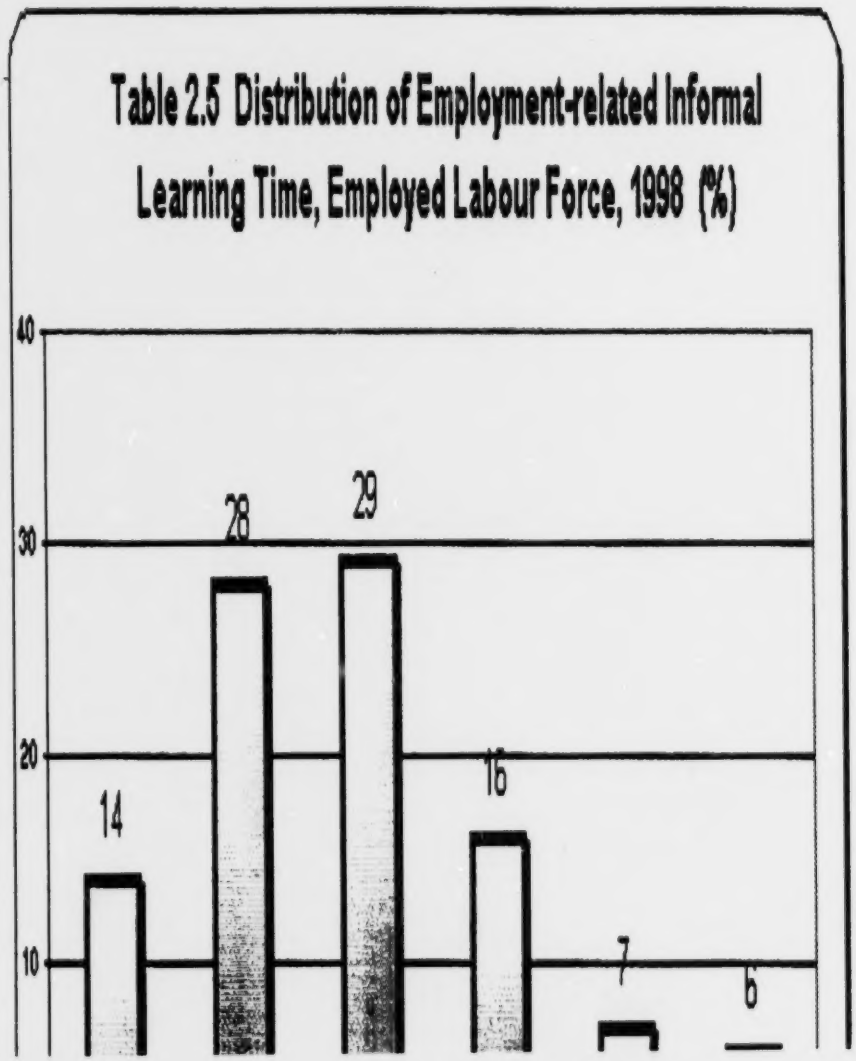
Table 2.4 Employment-related Informal Learning Activities, Employed Labour Force, 1998 (%)



Source: NALL (1999). N=951.

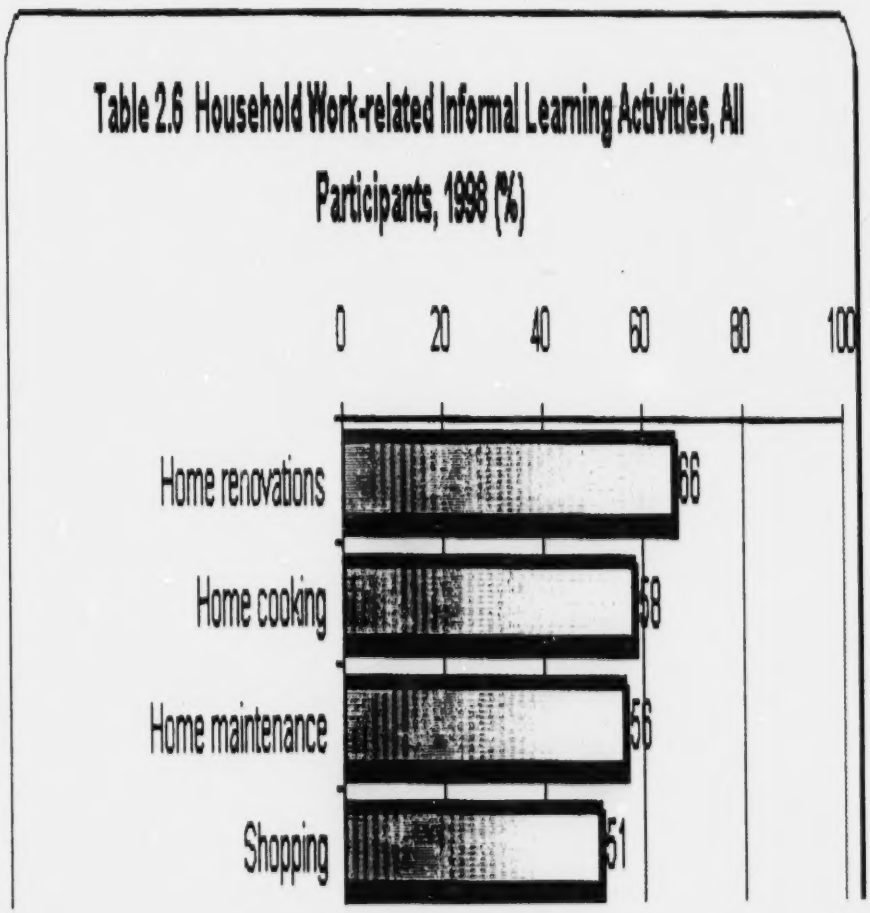
BEST COPY AVAILABLE

On average, currently employed respondents estimated that they spent about 6 hours per week in all of these informal learning activities related to their current or future employment during the past year. Table 2.5 summarizes the distribution of time estimates. Around 10 percent estimated that they spent less than an hour per week in employment-related informal learning activities. Very few employed people stated that they did no job-related informal learning but some found it too difficult to provide a specific estimate; all of these responses were treated as zeros, thereby contributing to a conservative estimate of average hours. The remainder were about equally divided into those who spent 1 to 2 hours, 3 to 5 hours and 6 or more hours per week in job-related informal learning. Less than 10 percent estimated that they spent more than 20 hours per week, which suggests that even when respondents are given extensive opportunities to identify job-related informal learning they are generally able to distinguish explicit informal learning from other activities and to recognize both the time constraints of multiple other activities in the 168 hour week , and are very unlikely to regard learning as a seamless web occupying most of their paid work time. While these estimates remain very approximate, it is almost certainly the case that a much greater proportion of currently employed Canadians are involved in job-related informal learning than in job-related training courses and that even course participants spend more time in job-related informal learning than in course-based learning activities.



Household Work-related Informal Learning

Those involved in household work over the past year (over 80%) have averaged about 5 hours per week in informal learning related to their household work. Table 2.6 summarizes the household work-related learning activities and the proportions who indicated participating in them.

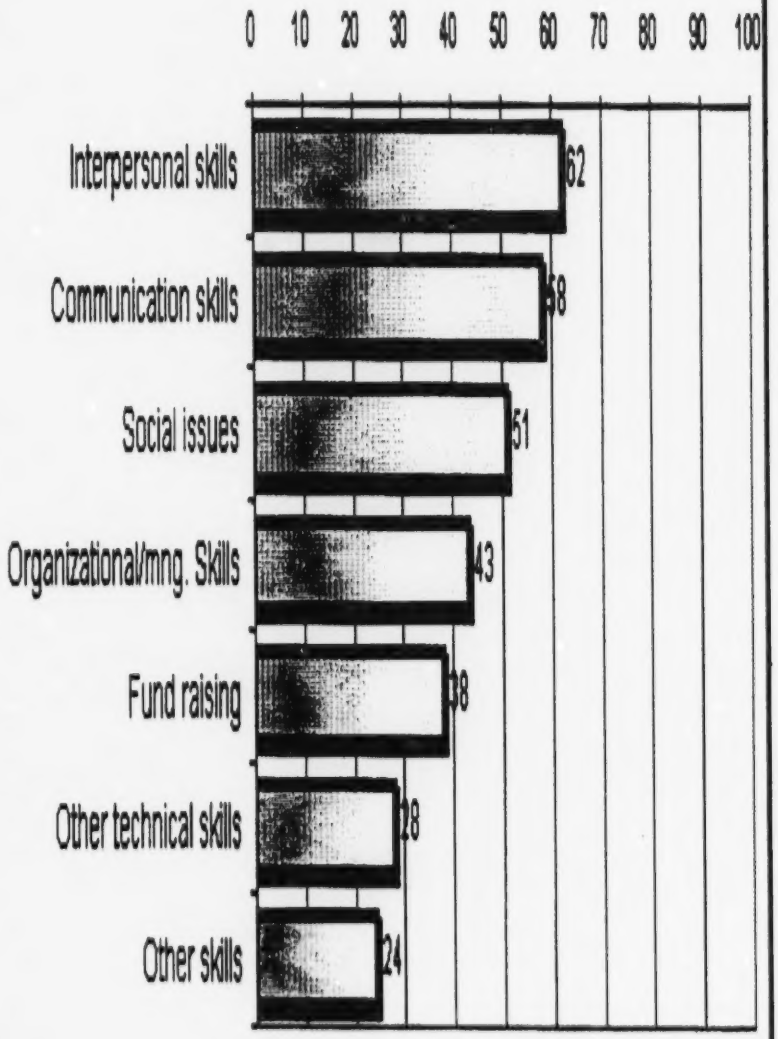


Again there are small numbers at the extremes, with around 10 percent indicating they devote less than an hour per week to housework-related informal learning and about 5 percent saying they spend more than 20 hours per week in such learning. Moreover, given the greater proportion of Canadians involved in housework than in paid employment and the only slightly higher average hours devoted to informal learning related to employment, it appears that we are now devoting about as much aggregate time to informal learning related to housework as to paid employment.

Community Volunteer Work-related Informal Learning

Those who have been involved in organized community work over past year (over 40%) devote about 4 hours a week on average to community-related informal learning. Table 2.7 summarizes the community-related informal learning activities and the proportions of community participants involved in them.

Table 2.7 Community Work-related Informal Learning Activities, All Participants, 1998 (%)



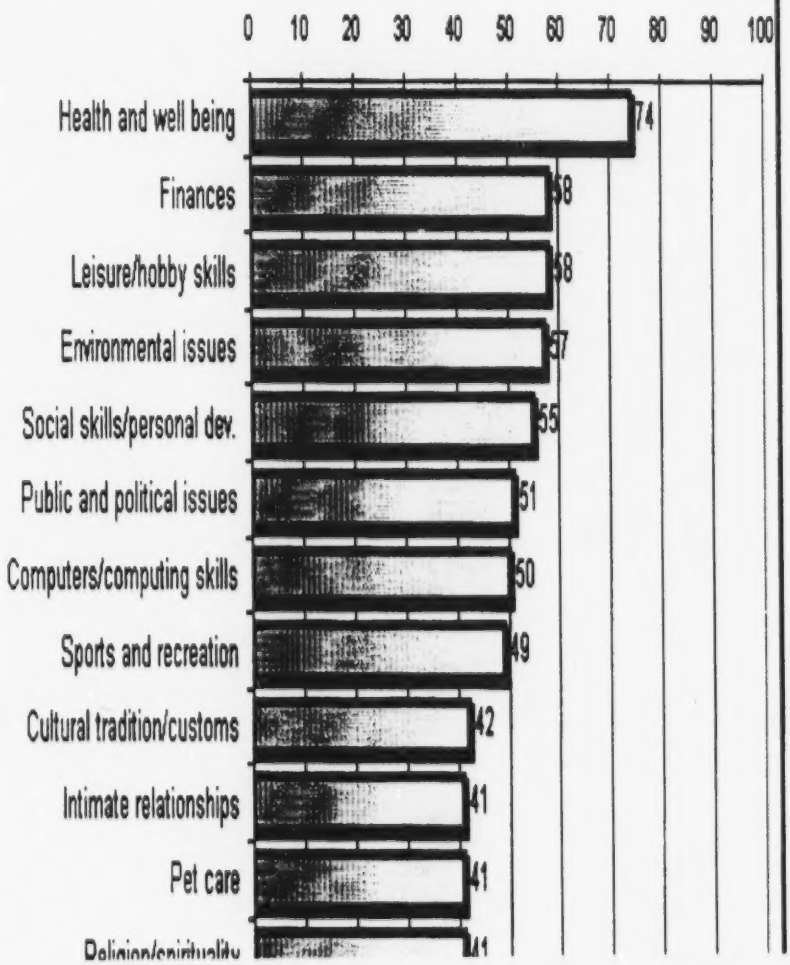
Source: NALL (1999). N=781.

The majority of community work participants indicate that they devote no more than 2 hours per week to related informal learning activities, while less than 10 percent devote more than 10 hours per week. The relatively low levels of participation in community volunteer work and related informal learning are consistent with the fact that this is the most discretionary type of work in advanced industrial societies and many people simply choose to opt out.

Other General Interest Informal Learning

Most people engage in some other types of informal learning related to their general interests and not directly connected with any of the three forms of work. Those who do so (around 90%) spend on average about 6 hours a week on these learning activities. Table 2.8 summarizes the basic sorts of general interest learning and the proportions engaging in these respective activities.

Table 2.8 General Interest Informal Learning Activities, All Participants, 1998 (%)



Around a third of respondents spend an hour or less per week in informal learning related to all of these general interests. The majority spend no more than three hours while less than 10 percent devote more than 10 hours a week to such general interest learning. While there is evidently very wide participation in informal learning related to many diverse interests, the incidence of work-related informal learning appears to be considerably greater-- if we include learning related to both paid and unpaid work.

Total Involvement in Informal Learning

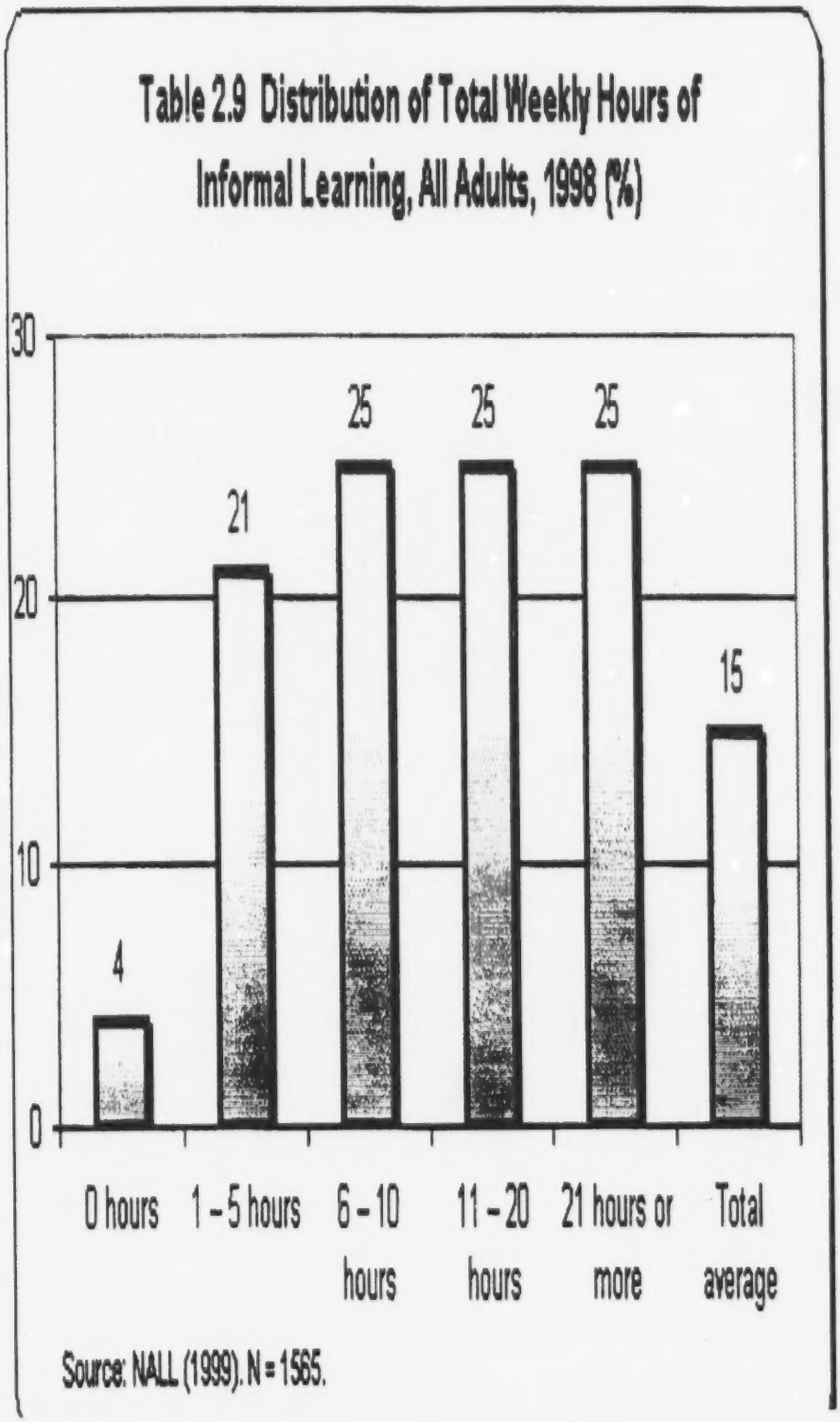
Nearly all Canadian adults (over 95%) are involved in some form of informal learning activities that they can identify as significant. The survey provides estimates of the amount of time that all Canadians, including those who say they do no informal learning at all, are spending in all four areas (employment, community, household, and general interest). The average number of hours devoted to informal learning activities by all Canadian adults over the past year was around 15 hours per week. Canadian adults therefore appear to be spending vastly more time in intentional informal learning activities than in organized education courses, which involve an average of considerably less than 4 hours per week if we include the entire population.

It is important to recognize here that this average estimate has been generated through a survey which was primarily devoted to identifying the existence of intentional informal learning on multiple topics in several spheres of life activities. Virtually all prior empirical studies of informal learning have found considerable initial reluctance among respondents to identify their learning outside educational institutions as legitimate learning.[12] It is only when people are given an opportunity to reflect on actual learning practices in the context of their daily lives that much intentional informal learning is recognized as such by the learners themselves. In addition, intentional informal learning activities often occur in combination with other social activities. While this makes time estimates more difficult and less exact, it is not a sufficient basis to either devalue or ignore informal learning processes.

The NALL survey estimate of 15 hours per week in 1998 has also been replicated by a 1998 Ontario general population survey (see Livingstone, Hart and Davie, 1999, p. 69). Further studies will still be needed both to confirm these recent estimates and track trends. But, it is at least fair to say that when Canadian adults have been given the opportunity to reflect on their informal learning practices along the topical lines summarized above, the average estimated time devoted to informal learning has been consistently found to greatly exceed the time that they devote to organized educational activities and to constitute a significant portion of their waking time.

As Table 2.9 illustrates, the average figure in the NALL survey masks considerable variation in the total amount of informal learning that Canadian adults say they are now doing. Less than 5 percent insist that they are either doing no informal learning, doing less than an hour per week or are unable to offer a specific estimate. About equal proportions indicate that they are engaged in 1 to 5 hours, 6 to 10 hours, 11 to 20 hours and over 20 hours per week of total informal learning activity. Put another way, about

three-quarters of Canadian adults now say they are spending 6 hours or more each week in some kind of intentional informal learning activities, most of this related to paid or unpaid work.



As previously discussed, the roughly comparable empirical studies in the 1970s suggested that North Americans spent an average of about 10 hours a week in informal learning activities (see Tough, 1978; Penland, 1977). The Ontario survey referred to above has been administered in both 1996 and 1998, and found that the average hours of self-reported informal learning increased from over 12 hours to around 15 hours during this period (Livingstone, Hart and Davie, 1999, p. 69). So, according to the few available estimates, the incidence of adult informal learning may have increased somewhat since the 1970s and may also have increased during the mid-1990s.

When we asked which of these learning activities are most important to Canadians in the respective spheres of activity, their most common responses were: computer skills related to employment, home renovations and cooking skills in household work, communications skills through community volunteer work, and general interest learning about health issues. Clearly, the overwhelming majority of Canadian adults are now spending a substantial amount of time regularly in these pursuits and are able to recognize this intentional informal learning as a significant aspect of their daily lives.

Relations Between Schooling, Non-Formal Education and Informal Learning

An overall profile of Canadian adults' current participation in non-formal education and informal learning activities by their levels of formal educational attainment appears in Table 2.10. Schooling and non-formal education continue to be mutually reinforcing; the more schooling people have obtained, the more likely they have been to participate in continuing education courses. Excluding students still in the initial cycle of schooling, the correlation between schooling and participation in non-formal courses in this survey is significant statistically (Pearson correlation .30, $p<.01$, $n=1371$). This relationship has been widely documented by adult education researchers (see Cross, 1981; Devereaux, 1985; Courtney, 1992; Livingstone, Hart and Davie, 1999). The major gap is now between school dropouts and the rest. Majorities of those who have completed high school or higher levels of schooling took some form of adult education during the past year while less than 20 percent of school dropouts did so; the higher the level of school attainment, the more likely they were to participate. A similar pattern occurs for plans to take more education in the future, with only about a quarter of school dropouts so inclined compared with the vast majority of university graduates. While both school attainments and adult education have made very impressive aggregate gains in recent generations, participation in adult education still tends to reproduce prior differences in educational attainments as well as to increase the relative gap in educational activities between those with school credentials and those without any.

Table 2.10 Participation in Non-Formal Education and Informal Learning by Formal Schooling Educational Attainment, All Adults, 1998

SCHOOLING	Taken adult education course or workshop past year (%)	Plan to take course (%)	Informal learning (%)	Informal learning (Hrs/week)
No diploma	18	28	89	16
High school diploma	52	46	98	15
Community college	58	62	98	15
University degree	67	70	98	14
TOTAL (%)	44	50	96	15

Source: NALL (1999). N=1565.

But as Table 2.10 also shows, there is no clear association between participation in either form of organized education and participation in informal learning. Nearly everybody participates in some form of intentional self-reported informal learning regardless of their education. Both the statistical correlation between schooling attained and informal learning for all respondents ($r=.02$, $p>.10$, $n=1549$) and that between non-formal participation and informal learning for those beyond the initial cycle of schooling

BEST COPY AVAILABLE

(r=.05, p>.10, n=1371) are therefore not significant.

School dropouts are as likely to spend a substantial amount of time in informal learning activities as those with higher levels of education. School dropouts are now spending an average of about 16 hours per week in various learning projects outside of educational programs, at least as much time as university graduates. Three important implications of this finding should be registered immediately. First, those adults with little formal schooling generally continue to be interested in learning activities and sufficiently motivated to devote substantial amounts of their discretionary time to pursuing such activities. Lack of motivation to learn per se is not a major barrier to participation in adult education courses. Secondly, the failure of educational institutions and even most proponents of lifelong learning to effectively recognize the extensive prior informal learning of non-credentialed adults may represent one of the major surmountable barriers to greater and more equitable participation in advanced education programs. I will address this point in Chapter 3 with reference to prior learning assessment and recognition (PLAR) provisions. Thirdly and most importantly, Canadian adults are now generally active learners engaged in a massive array of different institutional and informal learning activities and, in spite of the rapid expansion of educational institutions' adult programs, most of this activity goes on outside the walls of educational institutions.

There is a generally positive relationship between job-related, housework-related, community work-related and general interest forms of informal learning. The more time people devote to any specific type of informal learning, the more likely they are to engage extensively in other spheres of informal learning (Pearson r scores range from .17 to .34, p<.01). While some of these interrelations are not very strong, they are consistently significant across all four spheres of informal learning.

Among those who took organized courses in the prior year there is also a positive association between the time devoted to such classes and the amount of time they spent on both job-related and other spheres of informal learning (Pearson r scores range from .13 to .26, p<.01). But the majority of people did not take courses and the incidence of both job-related and total informal learning among them is no less than among those who did enrol. Therefore, it appears that those who are the most extensive adult learners, as indicated by their time commitment to informal learning, are also more likely to devote more time to organized courses when they do enrol, but that course enrolment per se does not necessarily stimulate greater informal learning activity.

So, interest in informal learning in one sphere appears to stimulate interest in informal learning in other spheres. Greater interest in informal learning also tends to be related to more extensive involvement in organized courses when and if people enrol in these courses. But greater interest in informal learning activities does not predict course enrolment. Many adults engage in extensive learning activities without ever taking an organized course.

Table 2.11 offers some further insight into the relative incidence of employment-related learning through organized courses and workshops and through informal means among the employed labour force. In all topic areas, employed people are more likely to learn job-related material through informal means, with typically about twice as many engaged in informal learning as taking any courses over the past year. While over half of those in the employed labour force took some form of course or workshop, nearly 90 percent were involved in some significant job-related informal learning during the past year. In terms of learning time, employed people spent about twice as much time on job-related informal learning as on course-based studies, an average of 6 hours versus 3 hours averaged over the entire employed labour force. Whether they relied on courses, informal learning or both, most participants were involved in multiple learning projects. This is consistent with the earlier research on self-directed learning which found that most informal learners were involved in five or more major learning projects annually (Tough, 1978).

Table 2.11 Participation in Employment-related Courses/Workshops and Informal Learning, Employed Labour Force, 1998

TOPIC	Job-related courses/ workshops (%)	Job-related informal learning (%)
Keeping up with general knowledge in job/career	29	71
New job tasks	24	63
Problem solving/ communication skills	35	63
Employment-related computer learning	31	61
Occupational health and safety	29	55
Other new technologies or equipment	33	52
Employee rights and benefits	20	43
Supervisory or management skills	14	38
Job-related literacy and numeracy skills	8	29
Job-related second language skills	7	13
Other employment-related informal learning	12	17
Any participation	66	86
Average hrs/week	3	6

Source: NALL (1999). N=951.

****

In sum, Canadians are now spending large and unprecedented amounts of time in three basic sorts of intentional learning: school attendance, non-formal education courses and informal learning activities. Canadians' formal educational attainments now lead the world after two generations of extraordinary growth. Participation in non-formal education appears to have grown equally quickly during this period and a majority of Canadian adults plan to take further education courses in the near future. Although few measures of informal learning are available, the incidence of adults' intentional informal learning activities also appears to have increased in recent years, and in any case is much more extensive than participation in organized forms of education.

While there is some evidence that both part-time school enrolments and overall participation rates in non-formal education courses may have declined in the past few years, there is no indication that adults' interest in learning has declined. Indeed, it is possible that recent increases in the incidence of informal learning may be partly a compensatory reaction to increased barriers to access to institutionalized forms schooling and non-formal education in Canada. This issue will be examined in Chapter 3.

By any reasonable criterion, Canada should now be considered as a "learning society" or a "knowledge society" in which the vast majority of adults are continually involved in a wide array of activities in pursuit of more knowledge, skill and understanding. Most of these learning activities occur informally beyond the recognition of institutional authorities. The central question is not whether we live in a knowledge-based society but whether educational institutions and paid workplaces are able to respond effectively to continuing increases in adult interest in and demand for knowledge.

CHAPTER THREE PATTERNS OF WORKING AND LEARNING

In this chapter I will first examine basic relations between work and learning in terms of the time devoted to each. Then I will consider patterns of association between employment statuses and occupational groups on the one hand and employment-related learning activities on the other. Finally, I will look at the issue of mismatches between people's knowledge and skill levels and their specific employment conditions, as well as the effect of mismatches on their involvement in lifelong learning.

Relations of Work Time and Learning Time

It is reasonable to assume that the more time people spend in a particular type of work, the more time they will devote to learning about it. But no prior study seems to have systematically explored this relationship. On the basis of the previously presented profiles of work time in paid employment, housework and community volunteer work as well as time spent in adult learning activities, I will begin

BEST COPY AVAILABLE

to assess these connections more closely.

The relationship between paid work time and course participation appears to have two contrasting dimensions. As will be documented in the following section, full-time workers are somewhat more likely to participate in adult education courses than part-time workers. However, among course participants there is an inverse relationship between work time and course-related learning time. According to the 1997 AETS survey, the longer hours participants are employed, the less time they spent on job-related courses ($r = -.36$, $p < .0001$, $n = 20{,}071$). Of those job-related course participants who were employed less than 20 hours a week, over two-thirds spent over 160 hours on courses; the majority of full-time worker participants spent less than 40 hours on course-based studies. So, full-time workers are more likely to participate in courses but less likely than part-time workers to spend a lot of time on them. It should be noted, however, that while most course participants in both the NALL and AETS surveys indicate job-related motives as primary reasons for course participation, neither survey provides distinct estimates for the time devoted to job-related courses; so these analyses have been based on the total course time indicated by those who indicated job-related reasons as a primary basis for course participation. Further surveys which distinguish both job-related courses and job-related course time are required to confirm these relationships. I will return to the barriers to participation in adult education courses in Chapter 4.

I will focus here on the non-course related results of the NALL survey, because this survey provides the most inclusive measures to date of both work time and informal learning, and because informal learning is both much more extensive and can be more freely chosen than adult education courses. These data therefore provide a stronger test of the posited relation between work time and learning time. The basic patterns of association between the actual amounts of the respective types of work performed and the incidence of different types of informal learning are summarized in Table 3.1.[13]

Table 3.1 Associations between Hours of Work and Hours of Informal Learning, Canadian Adults, 1998

WORK HOURS		Paid work learning	INFORMAL Housework learning	LEARNING Community learning	HOURS General interest learning	Total informal learning
Paid work	Pearson r	.17*	.01	-.06	-.04	.05
	N	871	872	500	883	912
Housework	Pearson r	.12*	.33**	.01	.14*	.18**
	N	843	1284	730	1305	1357
Community work	Pearson r	.17*	.22**	.48**	.19**	.34**
	N	756	759	760	744	781
Total work	Pearson r	.17*	.00	.00	-.04	.05
	N	871	872	971	883	912

Pearson r correlation significance level: *=.01 **=.001
Source: NALL (1999).

Statistical analysis confirms that among those engaged in each of the respective spheres of work, there is a significant positive association between hours of work and hours of sphere-specific informal learning. Furthermore, it appears that the greater discretion one has to engage in the respective types of work, the stronger the association between the hours devoted to such work and the related informal learning. Or, conversely, the more compulsion is involved in the work, the less motivation or opportunity there may be to spend time learning more about it even if one has to spend a great deal of time doing this work.

Paid employment is the most compulsory sphere of work for the more than 60 percent of the adult

BEST COPY AVAILABLE

population who do it. Most households are compelled to send at least one wage earner, and increasingly two, out to the labour market to ensure their continuing reproduction. Employed people may generally feel they have relatively little choice over the number of hours per week they actually perform paid work. However, there are certainly great variations in the amount of discretion workers have in performing their jobs and those who have greater job control tend both to work longer hours and to have greater chances to utilize their job-related learning skills. There is therefore a significant positive association between employment hours and job-related informal learning hours (Pearson $r=.17$, $p<.001$, $n=871$). The relationship remains stronger for men ($r=.21$, $p<.001$, $n=489$), than women ($r=.10$, $p<.05$, $n=390$), probably because of wider variations in job control among men. More men than women are still employed in more secure full-time jobs with longer hours and more learning opportunities. In any case, nearly all of those who are doing less than 10 hours of paid employment per week also do less than 3 hours of job-related informal learning; increasing employment hours up to a 40 hour week tend to lead to marginal increases in informal learning; but nearly half of those who are employed more than 50 hours a week also do more than 6 hours of employment-related informal learning.

Housework is a somewhat less compulsory sphere of work, at least in terms of the amount of time and the intensity of labour people devote to it. Over 90 percent of Canadians indicate they do at least some housework every week. But more aspects of this work are discretionary in the sense that they can be more flexibly scheduled and distributed by household members than paid work. The general relationship between housework and informal learning times is therefore stronger ($r=.33$, $p<.001$, $n=1284$). In spite of the fact that women still do much more housework than men, the strength of this association is virtually identical for both sexes. The vast majority of those who do under 10 hours a week of housework spend only a few hours at best in related informal learning; among those who do more than 10 hours of housework, over 40 percent spend more than 6 hours a week in related informal learning.

Community organization work is the most discretionary form of work. Less than half of Canadian adults indicate they chose to work with any community organizations last year. The general relationship between work and informal learning appears to be strongest in this sphere ($r=.48$, $p<.001$, $n=760$). Again this association is of similar strength for both men and women. The majority of those participants who give less than 3 hours a week to community volunteer work spend one hour or less on related informal learning; the majority of those who give more than 3 hours spend more than 3 hours on related informal learning.

In general then, the more one engages in any form of work, the more time tends to be devoted to related informal leaning. The greater degree of discretionary control one has to engage in the particular form of work, the closer the relation between work time and learning time. Paid work time has a weak association with job-related informal learning time and no significant association with total informal learning time, whereas housework and community volunteer work have progressively stronger significant associations with both sphere-specific informal learning time and total informal learning time.

If adult learning is constrained in one sphere of work, it may well be expressed in another where the learner faces less compulsion. Alienated employees can devote themselves to household improvements or hobbies, and bored homemakers may become community activists, for example. But, as Table 3.1 shows, those who engage more fully in community work tend to be not only more involved community learners but also somewhat more active learners in housework, paid work and general interest activities as well. The tendency for the incidence of informal learning in one sphere to be positively associated with the incidence in other spheres, as noted in Chapter 2, and the finding here that the strongest associations involve the most voluntary sphere of work suggests that those who are more active in more discretionary spheres of working life may also generally be more active informal learners. Some relevant studies focussed on job autonomy will be discussed below, but further in-depth research including all spheres of work is required to assess this relationship.

Employment Status and Learning Practices

Beyond a general correlation between hours of work and learning time, it also seems reasonable to posit that the greater the engagement in employment, the more likely one is to participate in

employment-related learning activities. Table 3.2 summarizes participation rates in current learning activities for the basic categories of current involvement in employment. The learning activities include enrolment in any organized course, participation in any of a variety of specific employment-related courses and workshops, and participation in any of a variety of job-related informal learning activities. The employment statuses include those who are employed full-time (30 or more hours per week), those employed part-time (less than 30 hours per week), employed students (including all full-time/part-time combinations of employment and registered student statuses), officially unemployed, and discouraged workers (available and willing to take a job but not currently looking). As Table 3.2 shows, the highest participation rates in all areas of learning are among employed students who are intensively engaged in a transition between an organized program of studies and either mastering or preparing to enter new jobs. Not only are employed students all registered in current programs of study, but nearly all are also engaged in both job-related courses or workshops and other job-related informal learning activities. Among the currently employed without student status, those who have full-time jobs appear to be slightly more likely to participate in both courses in general and employment-related courses and informal learning; this is consistent with prior research which has found that full-time employees generally have a wider variety of opportunities and employer support to pursue further education (see Betcherman, Leckie and McMullen, 1998). While the unemployed may have the greatest need for vocational retraining, they are generally even less likely than part-time employees to be participating in any form of employment-related learning. Those who are currently looking for jobs have course participation rates about half of full-time workers' rates and are also somewhat less likely to be involved in employment-related informal learning. Discouraged workers consistently have the lowest participation rates in courses generally, job-related courses and job-related informal learning activities. Those with full-time jobs are more than three time as likely as discouraged workers to be taking employment-related courses and over twice as likely to be involved in employment-related informal learning. These findings suggest a polarization of training opportunities that may be increasing the marginalization of the unemployed. We will look at specific barriers to participation in the next chapter. But it is also important to note here that the incidence of job-related informal learning is significantly higher than job-related course participation among all employment statuses except employed students and that the majority of the unemployed who are currently looking for job are also engaged in job-related informal learning.

Table 3.2 Employment Status by Participation Rates in All Courses, Employment-related Courses/Workshops and Employment-related Informal Learning, Total Labour Force, 1998

EMPLOYMENT STATUS	All courses / workshops (%)	Job courses / works hops (%)	Job-related informal learning (%)
Employed FT	50	65	86
Employed PT	41	53	78
Employed student	100	90	94
Active unemployed	27	33	63
Discouraged worker	22	20	35
TOTAL	52	62	81

Source: NALL (1999). N=1046.

Further details of learning practices by employment status are provided by Table 3.3 which summarizes the average hours devoted to courses, job-related informal learning and total informal learning, including all those in each employment status. Overall, the active labour force is spending around 3 hours per week in course-related studies. The average course hours generally follow the same patterns by employment status as course participation rates in Table 3.2, with employed students devoting almost 10 hours per week, full-time workers spending about 3 hours, and both part-time workers and the officially unemployed spending less than 2 hours per week in courses. But the average for all discouraged workers is also around 3 hours per week, which suggests that the relatively small proportion of discouraged workers who are able to get into courses tend to devote more of their greater discretionary time to such studies than other non-students in the current labour force.

Table 3.3 Employment Status by Average Hours per Week of Course-based Education, Employment-related and Total Informal Learning, Total Labour Force, 1998

BEST COPY AVAILABLE

EMPLOYMENT STATUS	Course-based education hours	Employment-related informal learning hours	Total informal learning hours
Employed FT	3	6	16
Employed PT	2	5	18
Employed student	10	6	15
Active unemployed	2	6	18
Discouraged worker	3	6	24
TOTAL	3	6	16

Source: NALL (1999). N=1046.

Those in virtually all employment statuses exhibit similar averages of around 6 hours per week of involvement in employment-related informal learning, which is significantly more time than they spend in all forms of course-related educational activities. The comparable average for discouraged workers again suggests that the minority of discouraged workers who engage in employment-related informal learning do quite a lot of it.

Those in the current labour force average almost 16 hours of total informal learning per week, perhaps slightly more than the general population average of 15 hours. But there is little difference in participation rates by employment status. All employment statuses have participation rates over 80 percent. It also appears that those in the labour force who have less or no employment time, may devote slightly more of their additional discretionary time to non-employment-related informal learning than full-time workers and employed students. Discouraged workers, who have the least commitment to either current jobs or the search for them, appear to have the highest total informal learning average of over 20 hours per week. *There is no indication here that discouraged workers become discouraged learners.*

The prevalence of greater reliance on informal learning than on course-based further education is also confirmed by analysis of learning about specific employment-related topics. As Table 3.4 illustrates, on virtually all topics those in the current labour force are generally about twice as likely to rely on informal learning as on courses. Both the participation rates and discrepancies between course and informal learning for different employment statuses are similar to the general patterns found in Table 3.2. The selected topics—learning about computers; learning about team work, problem-solving and communication skills; and learning about occupational health and safety—are among the most popular employment-related choices for both course enrolment and informal learning. The finding that the unemployed have substantially lower course and informal learning participation rates in such strategically relevant topics for future employment as computer skills suggests a strong possibility of future exclusion, especially for currently discouraged workers.

Table 3.4 Employment Status by Participation in Employment-related Courses / Workshops and Informal Learning, Selected Topics, Total Labour Force, 1998

EMPLOYMENT STATUS	Computing course (%)	Computing informal (%)	Team work course (%)	Team work informal (%)	Health & safety course (%)	Health & safety informal (%)
Employed FT	30	60	31	63	28	57
Employed PT	22	55	18	53	15	45
Employed student	43	67	50	70	30	53
Active unemployed	14	22	12	28	6	20
Discouraged worker	4	20	5	18	12	24
TOTAL	28	56	29	58	25	51

Source: NALL (1999). N=1046.

But overall, it is clear that employment-related courses/workshops and informal learning are both major activities of the current labour force, and that informal employment-related learning is far more

BEST COPY AVAILABLE

substantial than course-based studies for the currently employed as well as for those in most other employment statuses. Furthermore, while marginalized employment statuses may serve to inhibit employment-related non-formal and informal learning, even the most discouraged workers appear to continue to engage actively in informal learning related to unpaid work and other general interests. There is little evidence here that the "long arm of the job" has significantly diminished general intellectual vitality among those who do not have one (compare Tanner, Krahn and Hartnagel,1995).

Occupational Groups and Learning Practices

However, previous research does suggest significant variations among employed workers' attitudes, cognitive skills and even their personalities according to the degree of self-direction or discretion allowed by their jobs (see Kohn and Schooler, 1983). A larger body of research documents the inter-generational reproduction of many occupational statuses through school selection processes based on occupation and family-centred transmission of differential cultural codes (see Bourdieu, 1984). As a consequence of these selection biases as well as the greater financial resources of their families to assist their advanced education, Canadian children with origins in the families of corporate executives, managers and professionals have continued to be much more likely to enter and graduate from institutions of higher education and get better jobs than children from the working classes (Curtis, Livingstone and Smaller, 1992). This reproduction cycle continues to operate in non-formal education course participation, so that those with lower school attainments who typically end up in lower occupational positions[14] persistently exhibit lower levels of participation in adult education courses (see Tuijnman, 1991). Current patterns in Canada are illustrated in Table 3.5.

Table 3.5 Formal Schooling, Current and Planned Non-formal Courses and Total Informal Learning by Occupational Group, 1998

OCCUPATIONAL GROUP	University degree (%)	Course last year (%)	Certain to take course next year (%)	Total informal learning (hrs/week)
Professionals	76	66	63	15
Corporate executives*	70	71	61	17
Managers	52	73	64	13
Small employers	40	52	46	16
Self-employed**	28	52	32	14
Supervisors	20	63	47	14
Service workers	12	54	38	17
Industrial workers	8	33	38	17
TOTAL EMPLOYED	26	56	43	16

Source: NALL (1999). N=951.
* Data for Ontario from Livingstone, Hart and Davie (1999).
** Own-account workers without paid employees.

Corporate executives, managers and professionals, the majority of whom have university degrees, are about twice as likely as industrial workers to have registered in a course at an educational institution in the past year and also much more likely to have definite plans to take future courses. Other general economic factors closely related to occupational group, especially income, also predict adult education course participation rates; the highest income groups have been more than twice as likely as the lowest income groups to participate in adult courses (see Statistics Canada, 1997a, pp. 10-18). Those in the higher occupational groups continue to gain educational advantages.

However, no such disparities are evident in the general incidence of informal learning. As Table 3.5 also shows, corporate executives and industrial workers, as well as all other occupational groups, spend very similar average hours per week in all their informal learning activities. These occupational group patterns in the incidence of different types of adult learning activities suggest the existence of a much more egalitarian informal "learning society" hidden beneath the hierarchically structured forms of organized schooling. The general incidence of informal learning among service workers and industrial workers, and also the unemployed, is at least as great as among more affluent and highly schooled

BEST COPY AVAILABLE

occupational groups.

When we look at participation rates in more broadly defined versions of employment-related education (including workshops of short duration at the workplace) and job-related informal learning activities, the differences between occupational groups and between rates of non-formal and informal learning both diminish. As Table 3.6 shows, about two-thirds of the employed workforce has participated in some form of organized employment-related training sessions over the prior year. While managers, professionals and supervisors appear to have the highest course and workshop participation rates, smaller majorities in nearly all other occupational groups have also participated. The group differences in participation in job-related informal learning are much smaller, with over 80 percent of those in all occupational positions having been involved. Most people in all employed occupational groups are actively engaged in continuing learning related to their current and future employment.

Table 3.6 Occupational Group by Participation Rates in Job-related Courses/Workshops and Job-related Informal Learning, Employed Labour Force, 1998

OCCUPATIONAL GROUP	Job-related courses/workshops (%)	Job-related informal learning (%)
Managers	84	97
Professionals	73	92
Supervisors	72	87
Service workers	67	81
Industrial workers	56	83
Small employers	54	91
Self-employed	48	90
TOTAL EMPLOYED	66	86

Source: NALL (1999). N=951.

Occupational group differences in the intensity of participation in course-based and job-related informal learning by hours spent are summarized in Table 3.7. Once more we find a general prevalence of informal learning even when participation in all types of courses is compared with informal learning limited to employment issues. But there is also a suggestion here that those occupational groups which spend less time in course-based adult education tend to spend more time in job-related informal learning. The groups that have the lowest average hours in general course participation-- industrial workers, the self-employed without employees and small employers-- appear to have much higher averages in job-related informal learning time. Managers, supervisors, service workers and professionals, who have the highest average general course times, tend to devote roughly equivalent amounts of time to job-related informal learning. While all of these findings require replication and more in-depth study, there is some evidence here that those in occupational groups with relatively little access to organized courses are more likely than those in other groups to rely on informal learning activities in order to develop their job skills. But, whether or not employment-related informal learning is used to compensate for barriers to relevant course enrolment, the fact is that those in all employed occupational groups devote an average of around 10 hours per week to some combination of general course-based and employment-related informal learning activities.

Table 3.7 Occupational Group by Average Hours per Week of Course-based Education and Employment-related Informal Learning, Employed Labour Force, 1998

BEST COPY AVAILABLE

OCCUPATIONAL GROUP	Course-based education hours	Employment-related info rmal learning hours
Managers	6	5
Supervisors	5	5
Service workers	5	6
Professionals	4	5
Self-employed	2	7
Small employers	2	10
Industrial workers	2	9
TOTAL EMPLOYED	3	6

Source: NALL (1999). N=951.

While the "long arm of the job" certainly appears to influence continuing participation in adult education courses, the incidence of job-related learning activities in informal settings now seems to be more evenly distributed across the active labour force. Earlier longitudinal studies (see Kohn and Schooler, 1983, pp. 217-241) have found significant reciprocal effects between holding more complex, less supervised paid jobs and more intellectually demanding "leisure-time activities" (including hobbies and general interest reading). Further research which documents the complexity and authority relations involved in household and community work as carefully as in job conditions is required to assess more thoroughly the current influence of the "long arm of the home" on job-related and other adult learning. But the analyses of learning and work presented here suggest that the incidence of adult informal learning may be more strongly associated with unpaid work than paid work. In addition, extensive job-related informal learning is now being pursued not only by those with jobs of greater complexity and authority but also by those holding more routine, highly supervised jobs as well as by the unemployed. These findings raise the prospect of significant underemployment of some workers' job-related knowledge and skills in the available jobs.

Underemployment

As we have seen, since 1960 Canadians have achieved rapid increases in their formal educational attainments and non-formal education participation rates, while they have also pursued vast and increasing amounts of informal adult learning. By most reputable measures, the skill and knowledge requirements of the job structure have experienced much slower growth. It follows that, at least in overall terms, the cumulative employment-related knowledge and skills of the potential labour force probably now exceed the capacity of the current labour market to provide adequate numbers of corresponding sorts of jobs.

The phenomenon of underemployment has several different dimensions as I have argued and documented in detail elsewhere (Livingstone, 1999a). [15] These include:

- *Structural unemployment* which includes persistent numbers of people who actively seek employment without success;
- *Involuntary temporary* employment which includes those who hold part-time jobs but who would prefer to have full-time jobs;
- *Credential underemployment* which includes those people who have jobs with entry requirements significantly lower than their formal education a:d skill certification;
- *Performance underemployment* which includes job holders whose achieved levels of skills and knowledge significantly exceed the levels actually required to do their job, regardless of what entry credentials may be required; and
- *Subjective underemployment* which includes those people whose self-assessment is that they are overqualified for the jobs they have been able to get.

There have been many Canadian studies that have documented the existence of some of these dimensions of underemployment since the 1960s (e.g. Tandan, 1969; Statistics Canada, 1999c). I have already reviewed the current extent of structural unemployment and involuntary reduced employment in Chapter 1. Both of these conditions represent serious underemployment of the capabilities of millions of

BEST COPY AVAILABLE

Canadians. But the other three dimensions of underemployment which affect job holders are also serious problems which deserve closer examination.

Table3.8 offers some indication of the present situation in Canada in terms of the self-assessments of the currently employed labour force. About half of employed workers believe that it would take someone with the same formal education as they have a year or more to become fully skilled at their job. About a quarter think their jobs could be mastered in a few months or less. But regardless of the perceived difficulty of their jobs, the overwhelming majority of Canadian workers feel they are at least adequately qualified for their jobs. About 20 percent overall think they are overqualified, while less than 5 percent believe they are underqualified.. Among those whose jobs only require a few days to learn, the majority think they are overqualified. But even among those with jobs that take over three years to master, only a tiny proportion feel underqualified and incumbents in these most complex jobs are more likely to think they are overqualified. Other recent evidence from the national survey of 1995 post-secondary graduates suggests that over 40 percent of them felt they were underemployed in their jobs two years after graduation (Hay, 2000).

Self-ratings are an admittedly subjective indicator of job qualifications and few are likely to underestimate their qualifications in the context of competitive labour markets. But previous Canadian surveys have found quite high correlations between subjective self-ratings and more objective measures of job requirements ((Myles and Fawcett, 1990). In fact, other more objective measures suggest that underemployment in current paid workplaces may be even more substantial.

Table 3.8 Self-Ratings of Job Qualifications by Length of Time Required to Learn Your Job, Employed Labour Force, 1998

TRAINING TIME	Over-qualified (%)	Adequately qualified (%)	Under-Qualified (%)
Few days (9%)	51	45	4
Several weeks (9%)	28	72	0
Few months (11%)	27	72	1
Less than year (14%)	25	70	5
1-3 years (20%)	17	80	3
3+ years (32%)	11	84	5
Depends on person (5%)	7	93	0
TOTAL	21	76	3

Source: NALL (1999). N=951.

The *credential gap* can be estimated by the degree of correspondence between the formal educational attainment required for entry into the job and the actual educational attainments of job entrants. As Table3.9 estimates,[16] nearly 30 percent of the employed labour force now have educational credentials that exceed current entry requirements for their jobs by at least one credential level, such as community college graduates in jobs requiring only a high school diploma. Over half of the labour force have matching credentials and credential requirements. The remaining 14 percent of the labour force appears to be underqualified with lower educational credentials than now required for entry, But most of these people are older workers who obtained their jobs before educational entry requirements were raised and who have gained the work experience to continue to perform their jobs adequately. Employers have rapidly inflated the credential requirements for even the simplest clerical and unskilled manual jobs in Canada over the past 20 years. Yet the proportions of workers who exceed these entry requirements has exceeded 20 percent of the employed workforce throughout this period.(see Livingstone, 1999a, p. 72-78).

Table 3.9 Measures of Underemployment, Employed Labour Force, 1998

BEST COPY AVAILABLE

TYPE OF MEASURE	Underemployed (%)	Match (%)	Underqualified (%)
Self-assessment	21	75	3
Credential gap*	28	58	14
Performance gap	53	36	10

Source: NALL(1999). N=951.
*Data for Ontario from Livingstone, Hart and Davie (1999).

The *performance gap* has been typically estimated by the degree of correspondence between formal educational attainment and the general level of education actually required to perform the work, typically as estimated by general educational development (GED) scores produced by independent rating experts.[17] Various assumptions about the equivalences between GED levels and years of schooling have been made by different analysts. The measure reported in Table 3.9 is based on the previously used equivalencies that permit the finest differentiation of GED scores in relation to years of schooling at the top end of the scale. Such measures may be prone to a normative bias of increasing the number of years of schooling as equivalencies for respective GED levels simply because average school attainments have increased so greatly since the 1950s. They also completely ignore the informal learning and accumulated practical knowledge of the current labour force. So, even GED-based measures may underestimate the actual extent of underemployment of workers' skills and knowledge in job performance (see Livingstone, 1999a, pp. 78-85). In any case, according to this measure, around half of the currently employed Canadian labour force have job-related skills and knowledge that exceed the actual performance requirements of their current jobs. Over a third have matching attainments and performance requirements. About 10 percent are underqualified for their current jobs and perhaps should be pursuing some form of remedial training to ensure more adequate performance.

So, employed respondents' own subjective assessments generate the highest ratings of matching job requirements and qualifications. Measures based on self-reported credential required for entry versus credential held produce lower levels of matching. Measures based on independent educational equivalency performance requirements give the lowest level of matching and the highest estimates of underemployment. But all measures find the extent of underemployment to be greater than the extent of underqualification.

It should be noted here that a recent analysis of worker literacy skills and workplace literacy requirements based on the International Adult Literacy Survey (IALS) has found that about 20 percent of Canadian workers have literacy skills greater than the self-rated literacy requirements of their jobs, while 5 to 11 percent appear to experience some form of literacy deficit (Krahn and Lowe, 1997). These literacy-based measures suggest performance underemployment levels much closer to workers' subjective self-assessments and to the correspondence of their self-reported attained and required credentials than to the much higher high level of underemployment generated by independent GED-based performance measures. Both employed workers and employers may underestimate underemployment in terms of self-assessments and entry requirements because of tendencies to rationalize the status quo and accept credential inflation. But while Canadians'self-reports of the adequacy of qualifications for current jobs may produce somewhat optimistic levels of matching attainments and requirements, like the more independent GED-based performance measures, they all offer profiles in which underemployment exceeds underqualification by a ratio of 2:1 or more. I have reviewed the available prior Canadian evidence elsewhere in more detail and reached the same conclusion (see Livingstone, 1999a).Virtually all recent surveys on all three dimensions of the matching of employed workers' qualifications and job requirements have found levels of underemployment to be substantial (i.e. 20 percent or greater) and to much exceed levels of underqualification. More accurate measures of people's employment-related skills and knowledge and their extent of correspondence with available jobs are certainly needed. But the weight of present empirical evidence strongly suggests that the actual skill development of current workforce generally exceeds the gradually increasing job requirements.

Table 3.10 Incidence of Underemployment by Occupational Class, Employed Labour Force, 1998

BEST COPY AVAILABLE

OCCUPATIONAL GROUP	Self-assessment (%)	Credential gap* (%)	Performance gap (%)
Corporate executives*	2	9	17
Small employers	16	28	47
Self-employed	14	30	43
Managers	22	13	31
Professionals	9	16	38
Supervisors	20	30	70
Service workers	30	41	77
Industrial workers	20	38	47
TOTALS	20	28	53

Source: NALL (1999). N=951.
*Data for Ontario from Livingstone, Hart and Davie (1999).

Further analyses of these underemployment measures by occupational group confirm the occurrence of this pattern within most groups. The basic pattern is summarized in Table 3.10. The most consistent finding on all th:. ɔ measures is that corporate executives, who wield the most economic power, are least likely to be underemployed.. Hardly any corporate executives consider themselves to be overqualified for their jobs and their incidence of underemployment on other measures is significantly lower than other occupational groupings. At the other extreme, service workers, including mainly clerical and sales workers, appear to have the highest levels of underemployment on all job-specific measures. Nearly a third of service workers report that they think they are overqualified for their jobs, about 40 percent hold a higher credential than the job currently requires for entry, and on the GED-based performance measure around three-quarters are found to have more formal education than actually needed to do their job.

All occupational groups have lower levels of underemployment on self-assessment and self-reported credential criteria than on independent performance measures. There may be a number of group-specific reasons for these discrepancies. For example, the proprietorial classes, including corporate executives, small employers and the self-employed without employees are unlikely to perceive limits on the use of their skills since they can set their own working conditions. However, the performance gap measures are based on their much more diverse occupational categories rather than their proprietorial status. Managers, who are at the top end of the authority structure among wage and salaried employees, tend to have consistent levels of underemployment on all measures and relatively low levels on the more independent measures. While professionals tend to rely most strongly and directly on their high educational credentials for job entry and have accordingly low levels of subjective and credential underemployment, they do tend to have less control than managers over application of their skills in actual working conditions. Supervisors, service workers and industrial workers, who are at the bottom of the occupational status hierarchy, have the highest levels of underemployment on actual performance measures and the greatest discrepancies between self-rated and independent measures. This difference may reflect their more limited discretion to actually use the credentialed skills they required to get their jobs.

In any case, the overall orderings of results on each of these measures by occupational group are generally consistent with the predictions of the"mismatch" theory noted in the Introduction. Further analyses of the NALL survey and other data sources indicate that visible minorities and recent immigrants also tend to be more highly underemployed (see Expert Panel on Skills, 2000). Those in lower positions in terms of economic power are generally more likely to be underemployed .

Underemployment and Adult Learning

If, as these various measures suggest, underemployment is quite extensive, the potential effect on continuing learning efforts becomes a highly relevant issue. In the 1960s when underemployment was first identified as a social problem (see Livingstone, 1999a, pp. 52-55), some observers predicted that the spread of this condition would lead to widespread disaffection and rebellion among young people who could not get jobs corresponding with their educational investments, as well as a disinterest in further employment-related learning efforts. However, as Table 3.11 summarizes, there is little support for this thesis in the currently employed Canadian labour force. On both self-rated and independent

BEST COPY AVAILABLE

measures of underemployment, there are few

Table 3.11 Participation in Job-related Courses/Workshops and Job-related Informal Learning by Measures of Underemployment, Employed Labour Force, 1998

MEASURES OF UNDEREMPLOYMENT	Type of learning	Underqualified (%)	Matched (%)	Underemployed (%)
Performance gap	Job courses	71	64	69
	Informal learning	89	86	83
Self-assessment	Job courses	50	65	75
	Informal learning	81	84	91

Source: NALL (1999). N=951.

differences in employment-related learning practices between those who are underemployed, those who are underqualified and those who have matching qualifications for their jobs. In all instances, a majority of workers are engaged in both job-related courses/workshops and job-related informal learning activities. The lowest rates are for course participation among workers who subjectively assess themselves as underqualified. But this low rate probably reflects constraining circumstances more than disaffection with learning because underqualified participants tend to spend more time than others in job-related course studies. Those workers who are underemployed on any measure are at least as likely to participate in both job-related courses and informal learning as the underqualified and those with matching qualifications. We have also seen in the previous chapter that part-time workers are only slightly less likely to participate in job-related learning than full-time workers and that, while unemployed people--who typically have limited financial resources--are less likely to participate in courses of any kind, they continue to be very active informal learners.

****

Our brief look at relations between different types of paid/unpaid work and learning activities suggests that the more discretion we have in the use of our time, the more likely we are to devote time to some form of intentional learning. But the employment-related evidence reviewed here also indicates that most of those in the active Canadian labour force are engaged in a wide array of continuing learning activities related to their current or prospective jobs. This pursuit of additional knowledge, skill and understanding related to employment applies across different employment statuses and across occupational groups. Extensive engagement in job-related learning even applies to the considerable numbers who already have much more knowledge and skill than their jobs require, the "underemployed". We are certainly living in an "information age" in terms of the accessibility of employment-related knowledge from multiple sources, and in a "learning society" in terms of the continuing learning efforts of most workers. Although extensive underemployment contradicts the frequent claims that we are also living in a "knowledge-based economy", the lack of immediate opportunities to use their new knowledge in available jobs does not appear to have dissuaded workers from continuing to seek ever more of it. We now have a lifelong learning culture in the Canadian labour force but one which is insufficiently recognized in many paid workplaces.

CHAPTER FOUR LINKING FORMAL AND INFORMAL LEARNING: BARRIERS AND INCENTIVES

What are the major barriers to linking our extensive informal learning with more formal types of education and with recognition in paid workplaces? In this chapter, I will draw on the data available in the NALL and AETS surveys of adult learning to estimate the current influence of some of the most important general demographic and specific contextual factors impeding adult participation in non-formal courses generally and employment-related courses/workshops in particular. Then I will illustrate the interrelations between employment statuses, demographic and contextual factors in deterring course participation. I will also explore the potential impact of prior learning assessment and recognition (PLAR) provisions for more effectively linking informal learning with organized education and training programs.

BEST COPY AVAILABLE

Demographic Factors and Learning

We have already examined the relations between basic employment statuses and different aspects of adult learning. In this section we will look at the effects of age, sex and race differences on learning patterns. A later section considers the interrelationships of all of these general economic and demographic conditions with more specific contextual factors.

Age and Lifelong Learning

Any study of lifelong learning needs to attend to differences in learning patterns through the life course. We will begin here with differences in employment through the adult life course. As Table 4.1 summarizes, the majority of men and women between 18 and their early fifties are now in paid employment. About three-quarters of all Canadians in these age groups are in some form

Table 4.1 Proportion Employed by Age and Sex, All 18+ Adults, 1998

AGE GROUP	Men (%)	Women (%)	Total (%)
18-24	78	66	72
25-34	87	63	75
35-44	91	71	81
45-54	88	69	78
55-64	44	33	38
65+	8	4	6
TOTAL	71	53	61

Source: NALL (1999). N = 1565.

of employment. There is a dramatic drop in employment to a minority status after age 55, with only half as many of the 55 to 64 age group employed as of the 45 to 54 age group. Very small numbers of those over 65 continue in any form of paid employment. In all age groups, men are more likely to be employed than women and-- as suggested in Chapter 1--are more likely to have full-time jobs. But the drop in employment after 55 is equally dramatic for men and women. Analyses of job-related learning should keep these age-based employment differences in mind.

The general age-based patterns in learning activities are summarized in Table 4.2. The youngest adults are most actively engaged in all forms of education and informal learning as they navigate major transformations in their life courses. Two-thirds of Canadian adults under 24 participated in a further education course or workshop last year. While prior studies of self-directed learning have not recognized it, those under 24 also indicate that they spend more time in informal learning than older adults, an average of over 20 hours per week. Entry into adulthood is probably the period of most intense and extensive new "organizing circumstances" (see Spear, 1988) in all spheres of most peoples' lives within advanced industrial societies, often including initial career choices, major household and residential community choices not governed by parental authority, as well as generally establishing one's own life style. Young adults are not only the most likely to take further education courses to aid in these transitions; they are also most likely to depend upon and value organized courses rather than their own independent informal efforts in their learning projects, with nearly three-quarters indicating a preference for courses over informal learning. But, clearly, younger adults are doing a great deal of informal learning as well as a lot of formal courses.

Table 4.2 Age Group by Current and Planned Courses, Preferred Mode of Learning and Incidence of Informal Learning, All Adults, 1998

BEST COPY AVAILABLE

AGE GROUP	Taken course past year (%)	Plan future course (%)	Prefer learning on own (%)	Informal Learning (hrs/week)
18-24	67	80	21	23
25-34	53	62	38	16
35-44	55	56	38	15
45-54	46	49	51	15
55-64	25	24	62	12
65+	10	12	64	12
TOTALS	44	50	44	15

Source: NALL (1999). N = 1565.

The majority of those between their mid-twenties and mid-forties continue to be quite strongly reliant on further education courses and prefer to do as much of their learning as possible through courses. Older people are much less reliant on course-based learning. After the mid-forties, both participation in courses and interest in taking future courses declines rapidly, so that only around 10 percent of those over 65 have either taken a recent course or plan to do so. However, the well-documented low levels of participation in adult education courses by older adults is not indicative of a corresponding diminishing interest in learning per se. As Table 4.2 also shows, the majority of those over 45 generally prefer to do most of their learning on their own rather than through organized courses. More significantly, even the oldest age groups continue to exhibit an incidence of informal learning that is only slightly lower than those in their late twenties. Canadians over 65 indicate that they are still spending an average of about 12 hours per week in various informal learning activities. Since the major reason for taking most adult education courses has been job-related, it should not be surprising to see course participation drop as older people leave the labour force. The strong relation between decreasing future course plans and increasing preference for learning on one's own through the adult life course may also reflect our accumulating knowledge which makes further reliance on instruction by others less necessary as we get older.

So, aging is not significantly associated with decline in the incidence of informal learning beyond the intense period of entry into adulthood. Contrary to the stereotype of older adults' active interests rapidly diminishing as they approach and enter their retirement years, both the NALL survey findings and other recent research suggest that older people's interests in learning tend to remain quite strong (see also Glendenning and Stuart-Hamilton, 1995). With the exception of institutionalized people who were excluded from the survey, those over 65 spend nearly as much time on informal learning activities as middle-aged adults. While further course participation does decline rapidly from our mid-forties onward, this is not primarily because of declining interest in learning projects but because we increasingly replace course participation with our own independent informal learning efforts. The older we are, the more likely we are to rely on our own prior learning experiences as a guide for further learning. The notion that older people do not continue to be active learners should be discarded.

Of course, involvement in employment-related learning is closely related to changes in employment status. As Table 4.3 summarizes, majorities in all age groups up to 55 have taken some form of employment-related course or workshop during the past year and greater proportions have engaged in job-related informal learning activities. As people begin to leave the labour force in large numbers in their fifties, involvement in employment-related learning therefore drops in the older age cohorts. But the vast majority of those who continue in employment past their mid-fifties also continue to be active informal learners in relation to their jobs. However old they are, as long as people continue in paid employment they also continue to engage in related informal learning.

Table 4.3 Employment-related Course/Workshop Participation and Informal Learning by Age, All Adults, 1998

BEST COPY AVAILABLE

AGE GROUP	Job-related Course / workshop (%)	Job-related informal learning (%)
18-24	71	88
25-34	59	72
35-44	62	82
45-54	55	75
55-64	20	34
65+	1	4
TOTAL	47	61

Source: NALL (1999). N = 1565.

In human societies generally, the older we are, the more likely we are to be looked to by others as a source of their own learning. In contrast to elders in many communally-based societies, those in advanced industrial societies get relatively little respect for their accumulated knowledge. But younger workers nonetheless rely heavily on the experiential knowledge of older ones. Table 4.4 indicates the most important sources of job-related knowledge for the current Canadian labour force in respective age groups. The majority of adults under 24 rely on mainly older co-workers for their most important workplace knowledge. The majority of those over 45 rely primarily on independent learning efforts drawing on their own experience. Employer-sponsored job training programs remain a marginal component in workers' employment centered knowledge throughout their job careers. In this regard, the NALL survey supports the previously cited international studies which have found that over 70 percent of job training is done through informal learning (see Livingstone, 1999a, 38-42). The major source of job related knowledge is older, more experienced workers teaching younger ones informally. This collective informal learning process should be more fully recognized as vital to the reproduction of the labour force. Large Canadian private and public enterprises that have responded to economic pressures by laying off younger workers, offering early retirement to older workers and periodically hiring temporary staff find themselves with an aging core workforce of baby boomers who have few regular younger colleagues to whom they can hand on their vital tacit knowledge. While the demographic aspect of the renewal challenge created by growing exit of the baby boom generation from employment is now evident, the threat to effective transmission of useful production knowledge is not appreciated by most employers (Livingstone, 1996).

Table 4.4 Most Important Source of Job Knowledge by Age, Employed Labour Force, 1998

AGE GROUP	Co-workers %	Independent efforts (%)	Employer training (%)	Combinations (%)
18-24	52	26	12	9
25-34	32	36	17	16
35-44	21	47	20	12
45-54	20	53	13	14
55-64	9	66	12	13
TOTAL	28	44	15	13

Source: NALL (1999). N=951.

While declining participation in job-related courses should be expected as older workers gain more experiential knowledge near the end of their employment careers, retired workers remain active informal learners. The specific barriers to course participation by interested older people deserve closer attention.

Sex and Race Differences in Learning Activities

Gross differences in adult course partipcation rates by sex and racial background are generally less substantial than the occupational class differences noted in Chapter 3 and the age differences discussed above. But there are some important differences.

As Table 4.5 summarizes, there is little difference between men and women in the active labour force in terms of their gross rates of participation in either job-related courses and workshops or job-related

BEST COPY AVAILABLE

informal learning. Around 60 percent of all men and women in the labour force participated in some form of job-related course while around 90 percent were involved in job-related informal learning activities.

Table 4.5 Employment-related Course/Workshop Participation and Informal Learning by Sex, Total Labour Force, 1998

SEX	Job-related informal learning (%)	Job-related Course / workshop (%)
Men	62	82
Women	62	88
TOTAL	62	85

Source: NALL (1999). N = 1046.

Women in general are now actually slightly more likely than men to register in adult education courses, a difference which is partly attributable to the preparation of women currently outside the labour force for reentry into the labour market after childbearing (Statistics Canada, 1997a, pp.11-15). There are marked sex differences by fields of study, with men predominating in the more powerful and lucrative occupation-related areas of engineering and applied science techniques and trades courses as well as management and administrative subjects, while women are much more prevalent in adult education courses in fields involving nurturing service and clerical work (Statistics Canada, 1997a, pp. 19-60, 117-123). Perhaps most importantly, both among participants and non-participants in adult education courses, women are more likely than men to express unmet desires for more education and training (Statistics Canada, 1997a, p. 95).

Census surveys have confirmed that Aboriginal people have continued to be disproportionately excluded from advanced schooling. In spite of recent gains, only 4 percent of the Aboriginal population had obtained a university degree by 1996, compared with 19 percent of the non-Aboriginal population (Statistics Canada, 2000, p. 97). This very low university completion rate and persistently high school dropout rates are reflective of linguistic and cultural barriers, negative stereotyping, lack of role models with advanced schooling and the geographical remoteness of many Aboriginal people from post-secondary institutions. Other visible minorities, including black people and other non-whites from Asian and Latin America tend to have initial educational attainments that are comparable to the white population of Canada, partly because high educational attainments are favoured in Canadian immigration policy. As Table 4.6 indicates, the findings of the NALL survey, which are based on self-reported racial identities, suggest that the level of participation in employment-related adult learning for visible minorities may be as high as among whites. Both self-identified Aboriginals and black people report slightly higher participation rates in both job-related courses/workshops and informal learning activities than whites. These groups are also more likely to express general future course aspirations than whites. At least for Aboriginal people, their relatively higher participation in job-related adult courses may serve as partial compensation for their systemic exclusion from advanced schooling. These findings must remain very tentative given the very small sampling numbers for these visible minority groups in the NALL survey.

Table 4.6 Employment-related Course/Workshop Participation and Informal Learning by Self-Reported Racial Identity, Total Labour Force, 1998

RACIAL IDENTITY	Job-related course / workshop (%)	Job-related informal learning (%)
White	63	83
Black	70	91
Aboriginal	75	92
Other visible minorities	56	66
TOTAL	62	85

Source: NALL (1999). N = 1046.

BEST COPY AVAILABLE

Contextual Barriers to Course Participation

For Canadian governments, a lack of financial resources as a consequence of reduced tax revenues and contending priorities such as health care costs and debt servicing have limited non-formal education funding through most of the past decade, in spite of the fact that support for increased public funding for adult education has remained very high in opinion surveys on educational policy options (Livingstone, Hart and Davie, 1999, pp. 21-27). For employers, a fear among large corporations that other enterprises may poach those they train and a lack of sufficient financial resources among small businesses to afford training costs have been commonly identified as factors contributing to Canada's relatively low investment in adults' job-related education and training (see Betcherman, Leckie and McMullen, 1998a). Canada's relatively low population density and transportation constraints to reach institutional sites of educational delivery have also represented significant structural barriers. All of these general contextual limits could be diminished through changed government and employer policy priorities and better use of new educational technologies, matters to be addressed in the conclusion.

Within this general social context, numerous more specific institutional, situational and motivational barriers to participation in non-formal education programs continue to be identified by individual adults. Prior research has found that many of these factors pose significant obstacles (see Johnstone and Rivera, 1965; Cross, 1981; Courtney, 1992; Quigley,1997). Table 4.7 summarizes the findings from the 1993 and 1997 AETS surveys and the 1998 NALL survey with regard to perceived barriers to personal participation in adult education among non-participants who were in the active labour force. Many of the possible barrier items used in these surveys are the same.

Table 4.7 Barriers to Participation in Adult Courses for Non-Participants, Total Labour Force, 1993-1998

BARRIER	1993 Wanted course (%)	1997 Wanted course (%)	1998 Reasons for no future plans (%)
Lack of time	46	53	62
Bad time/place	24	42	60
Family duties	14	19	53
Lack of money	36	42	39
Don't need more	N/A	N/A	33
No employer support	N/A	7	22
No relevant course	10	10	21
Lack of child care	7	10	20
Lack qualifications	4	4	20
Courses boring	N/A	N/A	20
Health reasons	5	3	9
Language problems	2	1	8
Schools unfriendly	N/A	N/A	3
N	5591	3024	336

Sources: 1993 and 1997: 1994 and 1998 AETS Survey special tabulations; 1998: NALL (1999).

However, before examining the findings, it is important to stress that the AETS and NALL surveys are not strictly comparable in terms of the non-participants addressed. The AETS studies address people who wanted to participate in the past year but did not. This focus limits attention to those who expressed an interest in participation and ignores the pertinence of dispositional barriers among those who did not want to participate. The AETS surveys, therefore, have asked few questions about attitudes toward education (see Rubenson and Xu, 1997, pp. 84-86). In contrast, the NALL survey addresses those who do not plan to take any courses in the foreseeable future. The NALL survey therefore focusses on people whose expectations for adult education are somewhat lower than the AETS surveys; motivational factors are considered to be relevant and more attitudinal questions are included. The relative sizes of these different groups is equally important to keep in mind. According to the AETS surveys, adults who wanted to take courses in the previous year but did not do so constituted around 10 percent of the adult

BEST COPY AVAILABLE

population. In contrast, according to the NALL survey, much larger numbers, around 40 percent of the entire population and 30 percent of the active labour force, indicate that they did not participate in any kind of non-formal education last year and are definitely not planning to take any courses in the next few years. Also, since the NALL survey question on participation is somewhat more inclusive of workshops of short duration (as discussed in Chapter 2), non-participants are more likely to have no involvement in any organized educational activities than AETS respondents who were interested in but could not register in scheduled courses.

In spite of these differences, all three surveys have found that lack of time to take any more non-formal courses, the inconvenient times and places that courses are available, and high monetary costs of courses are the major barriers, consistently cited more frequently than most other possible factors. Comparison of the 1993 and 1997 AETS survey results indicates that the relative importance of most of the possible factors remained similar but that lack of time, inconvenient times and places, lack of money and lack of child care may have become increasing barriers for those who wanted to enrol but did not do so. In fact, nearly all comparable barriers involving perceived resource provisions may have increased during this period. In contrast, the minor significance of personal attributes as barriers, including health problems, lack of qualifications and language problems, remained virtually identical in the two AETS surveys. But again, motivational questions are largely ruled out by the narrow focus on interested respondents.

The NALL survey, which focusses its barriers questions on those non-participants with lower future expectations for non-formal courses, generally finds a higher perceived incidence for most possible barriers, including lack of time and the inconvenient times and places of course offerings. The most notable difference from the AETS surveys in terms of situational barriers is the much greater incidence of family duties as a barrier, becoming more important than lack of money. Heavy family responsibilities may well serve to extinguish aspirations for adult education. Lack of employer support and lack of child care also appear to represent larger barriers for those who are not planning to take future courses. Personal attributes such as lack of qualifications, health reasons and language problems also assume a somewhat higher incidence among non-participants with no future plans than among those who wanted to participate last year. But even among those in the NALL survey who indicate that they have significant health problems, these problems are generally regarded as far less important barriers to adult education participation than inconvenient course provision and material resource issues are. Some dispositional factors, notably expressions of disinterest in courses because they are boring, are significant barriers among non-participants with no future plans. However, as Cross (1981, p. 99ff) found in her earlier overview, dispositional barriers still generally remain of relatively little importance in relation to lack of personal material resources and restrictive institutional provisions.

But one important dispositional factor deserves mention here: a lack of a perceived need for further organized education among many non-participants who are not planning future education. According to the NALL survey, over a third of those who are not planning on future courses indicate that this is because they perceive no personal need for them. While most of these people express a high value for education in general, this does not translate into a high perceived personal need for additional courses. In the NALL survey, 20 percent of non-participants with no future plans do indicate lack of qualifications as a barrier, but this is still much lower than the proportion who perceive no need for further educational qualifications. In the AETS surveys, only 4 percent of those who wanted courses in the prior year did not enroll because of the barrier of lack of qualifications. As indicated in Chapter 3, the vast majority of the Canadian labour force perceive themselves to be either adequately qualified or overqualified for their current jobs. In this context, it is hardly surprising that a significant proportion of those Canadian workers not interested in further courses, and especially experienced older workers, would feel that they do not need them to do their jobs.

But regardless of extensive and increasing subjective underemployment of the already well-qualified, demand for further education courses remains very high generally. As we have seen, majorities in virtually all groups except older people and discouraged workers are planning to take courses in the next few years and those who are overqualified for their jobs are just as likely as the underqualified to be planning on taking future courses. The majority of Canadian workers are involved in the pursuit of more education whether or not they perceive an instrumental connection with their current jobs and in spite of numerous barriers.

Interrelations of Economic, Demographic and Contextual Factors

A thorough analysis of the economic, demographic and specific contextual factors related to participation and non-participation in non-formal courses would include full arrays of both types of factors as well as their interrelations. Some conceptual models have begun to incorporate many of these elements at least in generic terms (see Rubenson, 1987; Beder, 1991). But there have been few empirical analyses to date that have assessed the interrelations of economic conditions (such as employment status, occupational group, and income), demographic factors (such as age and sex), as well as specific contextual factors (such as institutional, situational and motivational barriers) across the full range of levels of participation in adult education.[18] In this section, I will examine the interrelations between several frequently identified economic, demographic and specific contextual variables among course non-participants. What is clear from the limited available measures is that several contextual barriers to participation have quite differential impacts according to the economic and demographic statuses of respondents.

The data presented in Table 4.8 are drawn from the 1997 AETS survey because the large sample size provides the most reliable recent estimates of multivariate effects. Comparable analyses have been performed with both the 1993 AETS and 1998 NALL data sets with similar patterns of difference in the active labour force and among all adults on the factors that are measured in all three surveys.

As Table 4.8 summarizes, older non-participants are less likely to experience either lack of time or lack of money as major obstacles to participation in non-formal courses while those in the 25-44 age groups are most likely to face family responsibilities and lack of child care as important barriers. In addition, many of those over 65 indicate health problems as an obstacle compared with only a small minority of those under 24. Money apparently does not buy more adult education time for higher income non-participants, whereas the lack of money is a major barrier to participation for lower income non-participants regardless of their time availability. Sex differences are also quite significant on these same factors. Women are more likely to perceive lack of money as an obstacle, while men are more likely to identify lack of time. Women also generally experience family responsibilities and lack of child care as more important barriers than men. In general, those in higher economic positions--with higher incomes, school attainments and employment statuses-- are much less likely to face lack of money for course costs and much more likely to perceive their lack of time as an impediment to participation.

Table 4.8 Differential Incidence of Contextual Barriers to Adult Courses by Socio-demographic Status, Interested Non-Participating Adults, 1997 (%)

	Lack of time (%)	Lack of money (%)	Family responsibilities (%)	Lack of child care (%)
AGE				
17-24	40	59	12	14
25-34	42	51	23	23
35-44	42	45	26	14
45-54	39	39	12	3
55-64	27	32	12	0
65+	6	28	10	0
SCHOOLING				
No diploma	20	54	*	*
High school diploma	37	55	*	*
College certificate	41	44	*	*
University degree	53	26	*	*
SEX				
Male	48	38	12	4
Female	31	47	24	17
INCOME				
Under 15,000	22	60	*	*
15-20,000	36	54	*	*
20-25,000	47	44	*	*
20-25,000	52	38	*	*
30-35,000	48	30	*	*
35-40,000	62	32	*	*
40-49,000	57	28	*	*
50,000+	64	16	*	*
EMPLOYMENT STATUS				
Employed FT	59	37	*	*
Employed PT	35	49	*	*
Unemployed	17	72	*	*

Source: AETS 1997 surveys special tabulations. N = 3024.
*No statistically significant differences at the .01 level of confidence.

Table 4.9 focuses on the active labour force in the NALL survey and provides information on differences by more detailed measures of occupational group and by self-reported racial identity, neither of which is available in the AETS surveys. Among the employed labour force, lack of time is commonly cited by non-participants in all occupational groups, but lack of money is a much more important barrier for the working class, especially for service workers in clerical, sales and personal service hourly rated jobs, than for professional and managerial employees. There are also significant differences in barriers according to racial identity. One might expect that visible minorities would more frequently experience language barriers, given higher likelihood of family origin in a non-dominant language. But visible minorities are also much more likely to perceive lack of employer support for training as an obstacle, suggesting the existence of more persistent racial bias against visible minorities in general by employers. In addition, visible minorities are most likely to experience lack of qualifications and inconvenient course scheduling or location as barriers to their participation in adult education; these apparent racial differences deserve more sensitive case studies.

Table 4.9 Differential Incidence of Contextual Barriers to Adult Courses by Occupation and Racial Identity, Uninterested Non-participants in Active Labour Force, 1998

BEST COPY AVAILABLE

		Lack of money		
OCCUPATIONAL GROUP				
Professional employee		11		
Manager		17		
Service worker		59		
	Bad time/place	Lack of qualifications	No employer support	Language barriers
RACIAL IDENTITY				
White	56	15	19	6
Non-white	77	57	48	21

Source: NALL (1999). N = 336.

Many of the above differences suggest powerful inhibiting effects on adult course participation from lack of financial resources among those in lower socio-economic statuses. Conversely, the greater pertinence of lack of time for courses among the more affluent may be indicative of a growing incidence of overwork among the full-time employed population, along with the polarization of incomes in society at large (see Schor, 1991; Yalnizyan, 1998). While there continues to be much dispute over both the extent and distribution of leisure time in advanced economies (see Robinson and Godbey, 1997), it is evident that those who work less paid hours tend to have more time available for more discretionary pursuits such as adult courses, but less money to afford them. If time and money are major barriers to people in different employment statuses, this at least suggests the possibility of some redistribution of employment as a means to address these barriers to further education.

Incentives for Increased Course Participation: PLAR

One of the most obvious ways to more fully link informal learning and formal education, and to enhance further participation in educational institutions, is the development of instruments and procedures (including portfolio presentation, challenge exams and other more interactive processes) to evaluate and recognize adults' prior learning achievements beyond schooling and offer advanced credit for course entry (see Vanstone et al, 1999). To what extent could the general implementation of prior learning assessment and recognition (PLAR) measures modify current differential patterns of educational participation?

Table 4.10 summarizes the basic patterns of association between current and planned participation in adult education and the effect of fuller recognition of prior learning beyond schooling on further education. The prior learning recognition question posed in the NALL survey was: "Would you be more likely to enroll in an educational program if you could get formal acknowledgement for your past learning experiences so that it would require fewer courses to finish the program?" Over 60 percent of Canadians indicate that they would be more likely to enroll with credit for prior relevant learning. Current participants in adult education are somewhat more likely (75 percent) to take advantage of PLAR measures than non-participants (50 percent). But current participants are much more likely, about three times as much as non-participants, to be planning future courses in the absence of PLAR. So, while implementing PLAR is not going to reverse existing social inequalities in adult education, it could serve to reduce the gap significantly.

Table 4.10 Planned Future Course Participation and Interest in Prior Learning Assessment and Recognition (PLAR) by Current Participation in Adult Courses, All Adults, 1998

	(1) Plan course (%)	(2) Interest in PLAR (%)	(3) Difference (2)-(1) (%)
Current participant	77	75	-2
Non-participant	27	50	23
TOTALS	50	61	11

Source: NALL (1999). N = 1565.

BEST COPY AVAILABLE

The magnitude of potential effects of PLAR in different social groups is indicated in Table 4.11. In general, PLAR measures could serve to increase interest in enrolling in adult education programs in all social groups except the most highly schooled and economically powerful. The largest differential effects are by occupational group. Industrial workers and the unemployed are likely to increase their planned participation in adult education programs by 60 percent or more using PLAR measures, while such measures have negligible effect on the planned participation of managers and professionals. The pent up demand for further education among lower status groups may have been as much ignored as their extensive informal learning activities

Table 4.11 Planned Future Course Participation and Interest in Prior Learning Assessment and Recognition (PLAR) by Social Background, All Adults, 1998

	(1) Plan course (%)	(2) Interest in PLAR (%)	(3) Difference (2)-(1) (%)
AGE			
18-24	80	80	0
25-34	62	75	+13
35-44	56	74	+18
45-54	49	62	+13
55-64	24	38	+14
65+	12	18	+6
SCHOOLING			
No diploma	25	47	+22
High school diploma	48	66	+18
College certificate	67	73	+6
University degree	73	64	-7
OCCUPATIONAL GROUP			
Manager	73	71	-2
Professional	74	74	0
Service worker	59	83	+14
Industrial worker	43	71	+28
Unemployed	40	79	+39
SEX			
Male	50	59	+9
Female	48	64	+16
RACIAL IDENTITY			
White	48	60	+12
Non-white	55	70	+15
TOTALS	50	61	+11

Source: NALL (1999). N = 1565.

PLAR would have only incremental benefit in addressing the cycle of educational inequality referred to earlier, because the more highly schooled are at least as likely to use it as the less schooled. But the greater positive effect of PLAR on future plans among high school dropouts and those with no postsecondary schooling would at least serve to narrow the gap, much as it would for current non-participants in adult courses generally. Women and non-whites would also experience small differential increases in participation interest over men and whites, respectively, under PLAR provisions. Interest in PLAR is strongly related to age. The oldest and most experienced remain least interested in course participation even under PLAR; older people would generally continue to find their own effective ways of learning most of what they want outside of courses. But a positive incremental effect of PLAR on planned participation is found throughout the life course, except among the youngest 18-24 age group who have the least prior learning experience and are already most fully engaged and planning future participation in educational programs.

****

In sum, there are clearly very substantial interrelated effects of economic, demographic and personal

BEST COPY AVAILABLE

contextual factors on decisions to participate in adult courses. Future empirical studies should examine these interrelations in more depth across the entire adult population. Most notably, the lack of money and discretionary time are among the greatest individual barriers to participation in adult courses,. But these barriers are of quite differential pertinence to those in higher and lower socio-economic statuses, respectively. As Table 3.5 has previously shown, those in higher economic positions have been much more able to participate in adult education courses when they want to do so. Recent restrictions on public funding for adult education raise the prospect of even greater relative disadvantages in educational participation for those in lower socio-economic positions who lack personal funding, in spite of continuing high interest in organized education and continuing engagement in informal learning activities.

Most of the particular barriers identified here have been documented for generations in Canada (e.g. Rubenson, 1983). The increased general levels of participation in and popular demand for adult education programs and courses in today's learning society only accentuate the importance of addressing these persistent barriers to the more equitable involvement of adults from all social backgrounds in advanced education institutions . Implementation of measures such as PLAR to increased credit for prior informal learning by educational institutions would be very positively received by the general public. But PLAR could also serve to accentuate recognition of extensive underemployment of existing skills and knowledge in our paid workplaces, and draw greater attention to the need for significant changes in the organization of paid employment to allow fuller use of many people's educational qualifications and informal knowledge.

CONCLUSION: IMPLICATIONS FOR EDUCATIONAL AND ECONOMIC REFORM

The preceding analyses have provided answers to most of our guiding questions:

- The shift to a knowledge-based economy has been very gradual with only marginal increases in the overall skill requirements of the Canadian job structure since the 1960s. More pronounced shifts have occurred in the divisions of paid and unpaid work between men and women and in the polarization of paid work time;
- There has been a dramatic expansion of learning activities among Canadians during this same period, including at least a fivefold increase in both completion of post-secondary education by youth cohorts and participation in non-formal education courses by all adults, as well as growing participation by people of al ages and virtually all social statuses in many sorts of informal learning which take up much more of adults' time than organized courses do. Lifelong learning is now a reality in Canada;
- There are serious mismatch problems between Canadians' learning achievements and the skill requirements of available jobs. Underemployment (including structural unemployment, involuntary temporary employment, credential underemployment, performance underemployment and subjective underemployment) is a much more widespread issue than underqualification;
- In spite of greatly increased educational participation, we are still a long way from equitable access to further education and training opportunities in the active labour force. Those in lower status groups face major material barriers to participation, including lack of money to enroll, inconvenient course times and places, and conflicting family duties;
- Implementing affirmative action measures such as tuition subsidies and PLAR could close the education access gap somewhat, but it will do nothing to address the larger problem of the underemployment of Canadians' existing skills and knowledge in our paid workplaces. In order to reduce underemployment, we must reverse the "more education for better jobs" optic and concentrate on measures to improve the quality of work through reorganizing and redistributing paid employment.

Canadian authorities are rightly proud that the United Nations has designated this country as the best place to live in recent years. We have vast spaces and natural resources, relatively high levels of political democracy and tolerance for cultural diversity, the highest formal educational attainments in the world and widespread access to the communication technologies of the information age. However, Canadians also have among the highest levels of underemployment of the formal educational attainments of our potential labour force (Livingstone, 1999a). Our levels of underemployment are even greater if we

consider the massive extent of employment-related informal learning which is usually unrecognized by both employers and people in general. The United Nations and other social analysts warn of growing economic polarization (Yalnizyan, 1998, 2000), a phenomenon which is intimately related to the dimensions of underemployment discussed earlier. The typical policy response to such economic problems, even when an absence of technical skill shortages is recognized, continues to stress more training for a knowledge-based economy (e.g. Expert Panel on Skills, 2000). Continuing pursuit of knowledge is never a bad thing and will certainly be needed to cope with the continual workplace, environmental and social changes that are endemic to our market-based economy. But without concerted address to economic reforms, both underemployment of our growing knowledge and an array of related social problems are likely to proliferate. So, what are the most feasible educational and economic reforms to enhance relations between working and learning in the Canadian labour force today? And what should policy makers, researchers, teachers and others responsible for education and work programs be doing in this context?

Education Program Responses to Popular Demand for Learning

Some recent policy discussions, such as the OECD's (1998, p. 9) "new approach to lifelong learning", assert the need for hierarchically organized education and training systems to become more responsive to the pathways of informal learning in order to aid effective linkages between education and the various spheres of our paid and unpaid work. But neither the OECD nor most other educational policy authorities yet appear to have much real appreciation of the vast amount of informal learning that is happening in society more generally, nor have they taken very serious steps to create means to aid in recognizing this prior informal learning in either educational institutions or paid workplaces.

Educational researchers, policy makers and program designers all need to become much more cognizant of the extensiveness of current adult learning activities. Narrow conceptions of "human capital" which estimate the skill and knowledge level of the workforce merely in terms of formal education credentials are increasingly inadequate. Much of the individual and collective adult learning that occurs in advanced industrial societies also has remained unrecognized by the people themselves. The average of fifteen hours a week that the NALL survey finds Canadian adults reporting they spend on all their informal learning activities is a significant amount of time to devote to any activity, as is the six hours per week that those in the active labour force devote to employment-related informal learning. The collective recognition of this informal learning and the fact that we already live in a "learning society" can lead to people themselves making better linkages with organized forms of education and work. By recognizing the amount of informal learning they are doing and registering this amongst themselves, workers, visible minorities and other educationally disadvantaged groups can begin to identify connections with the other learning and work activities in which they are involved with their families and community members. They can also be more articulate with government policy and program makers, employers, and labour leaders about what kinds of learning and employment programs should be developed and offered to link to the competencies and interests that are already there, rather than continuing to just accept established training and employability provisions. Further research on adult learning which systematically includes informal learning activities can enable more responsiveness to the interests and receptivities of the workforce for different forms of educational programs and employment. Mainly under the initiatives of the federal government, Canada already leads the world in documenting our uses of work time and adult education activities, through such periodic instruments as the Labour Force Survey, the General Social Survey and the Adult Education and Training Survey. Supplementary regular measures of informal learning along the lines of the NALL survey are certainly needed in future tracking surveys of adult learning and should be widely disseminated to stimulate public awareness and responsive policy making by governments, employers, and labour movement leaders.

The means are available to address many of the previously identified contextual barriers to increased participation in further education, given sufficient political will. Consider, for example, lack of money, lack of time, family responsibilities and child care. With regard to potential students' money problems, there is now great popular concern that further fee increases will increasingly prohibit those from lower income families from participating in advanced education; and there is also very widespread public support for differential student assistance programs for qualified students to enable their participation, as well as almost universal popular support for income-contingent student loan repayment plans (see

Livingstone, Hart and Davie, 1997, pp. 68-71).

As for the lack of discretionary time for adult courses, the 1993 AETS survey report concluded that "reduction or elimination [of this barrier] could be achieved by reorganizing work schedules, by a greater use of new technologies in the delivery of education and training and by adapting available facilities" (Statistics Canada, 1997a, p. 99). According to the 1997 AETS survey, face-to-face classroom instruction remained the prevalent mode in about 90 percent of adult education courses. There is certainly scope for electronic modes of distance education delivery to make courses more available at more congenial times. Unfortunately, there is little indication yet that electronic modes have led to either more equitable access or enhanced quality of instruction (see Boshier, et al, 1997; Noble, 1998). More flexible scheduling of both employment hours and education programs by employers and educational authorities can certainly address the major barrier of inconvenient times of course offerings. There is also very strong popular support for paid educational leave either as a legal right of all employees or as a negotiated benefit (Livingstone, Hart and Davie, 1999, p. 62). In short, there is popular political support for a variety of technically available measures related to the rescheduling of paid work and study time and increased opportunities for adult education.

Family responsibilities and lack of child care provisions represent significant barriers to educational participation for young parents and especially mothers. Traditional gender role attitudes still operate within the typical Canadian household (see Livingstone and Luxton, 1996). Younger men are more likely to do a somewhat greater share of domestic labour than their fathers. But more structural changes are needed in society at large, particularly greater provision of child care facilities. The obvious way to do this in Canada is through state-funded early childhood education programs. The majority of Ontarians, for example, now believe that education programs should be available in all school boards to all children over the age of 3 (Livingstone, Hart and Davie, 1997, pp. 19-20). As previously noted, Canada trails nearly all other western industrial countries in early childhood education, and its social benefits for children and society in general have been well established by extensive research (Keating, 1999). The previously ignored additional benefit is that more young parents could continue their own education.

Prior learning assessment and recognition (PLAR) measures can have some positive effects in addressing several inequalities in access to education programs, as estimated in Chapter 4, and such measures should be implemented as widely as possible, especially for entry into advanced education. The most extensive Canadian research on actual effects of the very limited use of PLAR to date finds that users in college programs indeed shorten their programs, reduce their course loads and save money by using PLAR. However, in the absence of extensive external promotion of PLAR, the users are mainly successful previously enrolled college students (Aarts et al, 1999, pp. 69-73). Wider marketing of PLAR per se could narrow the participation gap somewhat. But, especially given the greater predispositions to consider using PLAR among the already more highly schooled, wider availability of PLAR credit measures will not erase other socio-economic and contextual barriers or reverse current inequalities in educational participation.

Affirmative action provisions such as tuition and child care subsidies as well as PLAR entry measures, as well as lifetime learning credit schemes like that recently proposed by the federal government, should be widely implemented in educational institutions to broaden access. But such measures have no necessary effect on what occurs within educational programs. The reorientation of the content and delivery of these programs could have very positive recruitment effects among currently disinterested, less educated adults. As Roger Harrison (1993, pp. 15-17), with particular reference to Britain, summarizes the challenges for the higher education institutions where most adult education now occurs:

> Higher education practices have much to learn from community approaches which have been successful in presenting learning opportunities which are more congruent with the situation of non-traditional learners [i.e. more informal tone, learner-centred teaching methods, highly relevant subject matter, community-based settings, and respect for participants as competent and experienced adults]....Easier admission procedures, more flexible study patterns, creche facilities, Access courses, all have a part to play in creating a more accessible system, but unless we are prepared to take account of prior experience of

> adults, not just at the point of entry into formal education, but as an integral part of any learning project, the wider policy aims of access will always be subverted. [emphasis added]

Unless adult learners who are uncomfortable with traditional, teacher-centred approaches are welcomed in the classroom, access measures such as PLAR are unlikely to lead to their sustained involvement in advanced education in Britain, Canada or elsewhere. The perceived barriers within educational institutions primarily revolve around insensitivity to the standpoints and prior learning experiences of "non-traditional learners". There is a pervasive "cultural capital bias" which tends to denigrate the prior knowledge and skills of those with origins in subordinate social groups, such as lower classes and some visible minorities and immigrants (Livingstone and Sawchuk,2000). The varied and often complex learning activities and capacities of the target populations of training programs, including the informal learning experiences and learning capacities of many people who have been systemically excluded from advanced education in the past, offer rich resources for new curricular development (e.g. Lave, 1988; Engestrom, 1992). Virtually all adults are active general learners who know a lot more than they will ever be able to demonstrate in specific education and training courses, and they will get more out of these courses if they can put more of their relevant prior learning and experience into them. So, authorized curriculum designers need to more fully incorporate the relevant informal knowledge of participants in education and training programs and to reach out to include lessons from and dialogues with uncredentialled elders who have mastered relevant bodies of informal knowledge.

High priority should be given to enhancing the language skills of the minorities who perform poorly in the dominant language and are thereby blocked from gaining certification in other technical skills or, in the case of immigrants, from applying already acquired technical skills. We need to recognize that many with low levels of dominant language literacy have multiple other useful skills they should be enabled to apply, but that without enhanced dominant language skills they will be increasingly excluded from equitable participation in an increasingly symbolic information-dominated society. Further analysis of the very small proportion in the NALL survey who rate their reading skills as "poor" (3 percent) indicates that these people have very low course participation rates but, in their efforts to survive economically in the information age, spend much more time in employment-related informal learning than those with better reading skills. Adult basic education programs to ensure relevant language competency for all are increasingly vital to avoid extreme marginalization of low-literate adults.

More generally, neither prior exclusion from advanced education nor underemployment have served to seriously diminish most Canadian adults' continuing interests in learning per se. Recent financial restrictions on access to educational programs appear to have led to compensating increases in the incidence of informal learning. It is better to respond to this demand for knowledge by providing more equitable access provisions (including more flexible course scheduling, tuition fee subsidies, child care provisions, PLAR, and responsive curriculum) to good quality further education programs than to move to simple user-pay options that may reduce immediate financial demand on government and private enterprise budgets. User-pay options promote further educational inequity between those who can afford institutionalized education and those who cannot pay much but who may have similar learning capacities and interests, and devote as much time and energy to intensive informal learning activities. Opinion polls show that, in correspondence with their persistent interests in learning and in response to recent restrictions on educational access, Canadians are increasingly strong supporters of greater funding of both public schooling and adult education (see Livingstone, Hart and Davie, 2001). Canadians' participation in adult education courses already trails the levels attained in numerous other OECD countries (Office of Learning Technologies, 1998; Statistics Canada, 2000, p. 51). This status is in marked contrast to our world leading formal educational attainments and our massive participation in informal learning. If our policy makers are truly committed to sustaining and nurturing lifelong learning in the information age in relation to work, consumption, citizenship and other general interests, then increasing resources will have to continue to be allocated to advanced education and adult education programs. In light of the popular demand for more education, and in spite of extensive underemployment, there is no other reasonable democratic choice.

Private employers are unlikely to support additional training measures that appear to work against their competitive market position. The major disincentives are fear that employees once more formally trained will leave for better jobs in other enterprises and, secondly, the often-accurate perception that there is already an ample supply of many skills in the labour market, which makes further company

training investments unnecessary in the short run (Betcherman et al, 1998a). But moving to more flexible study-related work scheduling, as well as providing better information about training opportunities, and collaborating with governments and public educational institutions in partnerships that pool risk and facilitate educational program access are all low immediate cost items that can only enhance the knowledge and skills of the entire workforce and the competitive position of Canadian enterprises in the long run. If leading employers were able to modify the dominant short-term optic on training and recognize that, especially in the many areas where there are indeed current skill surpluses, sustainable longer-term competitive advantages could accrue to those firms which positively support the learning opportunities that workers continue to seek and which regard their entire workforces, including the many currently underemployed, as members of genuine "learning organizations". One of the most potentially effective, low cost ways to do this is to implement measures to recognize and reward the prior informal learning experience of current employees in the workplace. Similarly, employer recognition that non-white employees disproportionately experience exclusion from training opportunities and the introduction of modest affirmative action programs within the firm can aid in sustaining a competitive workforce. The alternatives to greater support and recognition for workers' learning activities-- both for Canadian enterprises and the country as a whole-- are to lose or alienate many skilled workers anyway. For public authorities or private enterprises to ignore, deny, divert or try to restrict popular democratic demand for further education is likely to prove counterproductive in the information age.

Economic Reforms to Address Underemployment

The empirical findings of persistent social inequities in educational access and substantial underemployment particularly among lower occupational groups provide considerable support for the interactive supply-demand conflict theory of employment-learning relations outlined in Chapter 1. The simpler supply and demand side theories do not account as well for the observed changes in work and learning or deal accurately with the major issue of underemployment. As we have seen, the rapid diffusion of new information technologies in paid workplaces has not led to dramatic increases in job skill requirements or the rapid emergence of a knowledge-based economy. There has been a gradual net upgrading of job skill requirements and occasional, widely advertised skill shortages in particular specialties such as electrical engineering. But knowledge workers doing primarily planning and design work still make up only a small minority of the occupational structure. In contrast, the rapid expansion of advanced schooling, adult education course and workshop participation, and involvement in informal learning have created a "learning society" in which adults are spending historically unprecedented amounts of time in multiple learning activities, and in which growing numbers of people are experiencing underemployment as the general level of knowledge and skill increasingly exceeds the requirements of the established job structure. This oversupply of qualified people for existing jobs continues to encourage employers to inflate required entry credentials as a means of selection. Indeed, credential underemployment may serve to stimulate still greater individual efforts to obtain further educational credentials and related skills to enhance relative chances in competitive job markets. The growth of knowledge is never a bad thing per se. But the underemployment of acquired knowledge and skills in current paid workplaces is becoming a very serious social problem. The reasonable solution to this problem is not to restrict access to educational institutions through higher fees or other means. This would merely increase social inequities between those from affluent family origins and the rest of society. Besides, as the analysis of underemployment and learning activities in Chapter 3 shows, those who are underemployed would continue to seek further knowledge through informal means and their actual underemployment would persist.

The only effective solutions to current underemployment problems are likely to be found in economic reforms that encourage our highly educated labour force to make fuller use of their skills and knowledge in paid workplaces. The most feasible reforms include work redistribution and workplace democratization.

In light of the increasing polarization of paid employment between those who feel compelled to work over 50 hours per week and those involuntarily working under 30 hours or unemployed, an obvious response is to redistribute employment hours among them. The most equitable and effective measures will probably involve some form of legislation of shorter regular workweeks, coupled with financial incentives for the overworked to reduce their hours and collective bargaining agreements that ensure

both work-time flexibility and job security. European nations such as France, Germany, the Netherlands and Denmark have already implemented work-time reduction measures that have reduced unemployment, created more free time for the previously overworked with little financial loss, and appear to be associated with increased productivity per worker (see Hayden, 1999). In most cases, implementation has seen serious conflicts and negotiations between employers, labour unions and governments. The prospect in North America may be even more challenging. But with little public debate to date, proposals to establish a shorter standard employment week and further restrictions on overtime work to create more jobs have been supported by about half of Canadians in recent opinion surveys (Livingstone, Hart and Davie, 1999, pp. 61-62). If the alternative is to witness the persistence of our current polarization of work time along with chronically high numbers of actively unemployed and discouraged workers, can we afford to ignore the challenge?

Even with significant paid work-time reduction measures, credential and performance-based conditions of underemployment are likely to persist among the employed labour force. If the performance-based measures of mismatch presented in Chapter 3 are even remotely accurate, workplace reorganization is greatly needed to allow many workers to use their skills and knowledge more fully in their jobs. The finding in the NALL survey that the strongest positive relationship between work and learning is found in voluntary community settings appears to support the thesis that greater discretionary control or self-management can lead to fuller use of work-related skills and knowledge. Prior research has also found that increasing employees' discretionary control in paid workplaces is related to greater utilization of useful knowledge and greater integration of informal work-related learning with organized education and training programs (see Livingstone, 1999a, pp. 226-275). In short, greater democratization appears to be the most sustainable way of reducing underemployment in the workplace.

A growing number of Canadian enterprises and unions are beginning to comprehend the magnitude of performance underemployment and are taking positive steps to more effectively recognize the knowledge and skills of their workers, mainly through job redesigns that share strategic information, involve workers in decision-making and otherwise permit them to have more discretion in the social relations of production (see Lowe, 2000 for a recent overview). There are multitudes of specific innovations (including work teams, job rotation, job enrichment, incentive pay, flexible scheduling, etc.) that have sometimes been successful in enhancing both the quality of working conditions and productivity per worker. But as Lowe (2000, pp. 151, 174-75) keenly observes, it is not specific job innovations that lead to sustaining such high quality paid workplaces but the creation of a deeper organizational and societal work culture based on the following principles:

- a basic right to paid work that provides a decent living standard and economic security.
- opportunities to engage in tasks that are personally fulfilling and encourage initiative and creativity.
- healthy and safe paid work environments that support a balanced family and personal life alongside employment goals.
- worker participation in decision-making as a basic right, including a culture of openness about strategic information and required resources.

Implementing these principles in many current paid workplaces, to say nothing of the Canadian economy in general, will be very difficult. But the documented existence of a workforce that is amply qualified to achieve such participatory workplaces, and the alternative prospect of increasing underemployment, should stimulate serious continuing efforts in this direction.

In immediate terms, the general recognition of widespread underemployment of the existing pool of knowledge and skill should encourage employers, labour unions, employees, governments and local community groups to develop collaborative programs to identify more fully the actual local pools of knowledge and skills in their enterprises and communities, and cooperate in community development initiatives to match people's underused skills and knowledge with local economic needs through democratized job redesign, work redistribution, and creation of environmentally sustainable new jobs (e.g. Milani, 2000). The most important economic role that professional educators can perform in this context is to participate actively in the development of accurate profiles of the current community skill and knowledge pool and the types of local jobs to which underemployed people could constructively direct their often very impressive learning capacities, and to disseminate this information through the

schools. No other occupational group is as well situated to serve as community resource coordinators for developing the work of the next century.

The expanded conception of work which includes recognition of unpaid housework and community volunteer work as very important contributors to the reproduction of human life must continue to be documented in order to more fully understand work and learning interrelationships in advanced industrial societies. It is evident that various new forms of paid employment (e.g. environmental cleanup programs, domestic care companies, other new socially useful products) in both public and private sectors are being created by the commodification of some of this work. While such jobs may alleviate unemployment somewhat, most of the domestic and household service jobs created are likely to be in small businesses in which self-employed, contract or home-based workers face the largest challenges to building high quality work cultures and overcoming performance underemployment conditions. More equitable divisions of paid and unpaid labours between the sexes can certainly aid women to participate more fully in the labour market but cannot ensure reductions in their underemployment within paid workplaces. The primary solution to underemployment is likely to remain in the redistribution and democratization of already existing forms of paid employment.

****

While Canada has produced previous governmental advisory reports on overcoming the separation of work and learning (National Advisory Panel on Skill Development Leave, 1984) and options for redistributing paid employment (Advisory Group on Working Time and the Distribution of Work, 1994), it is now time for *a national forum which brings together all major interest groups to consider concerted economic policy initiatives to address the problem of underemployment.* With our high levels of formal education and underemployment, and the research knowledge now available about our patterns of work and learning, Canadians are in a unique position to lead the world in an open, informed debate about the most preferable, feasible economic and educational reforms to address underemployment, nurture development of a knowledge-based economy and continuing lifelong learning, and provide sustainable living conditions for all citizens. If we do not seize the initiative, if our current education and training ships and our growing fleet of self-declared "learning organizations" do not respond effectively to the massive icebergs of informal learning and underemployment, aspirations to realize a much more knowledge-based economy as well as to maintain the country's current high global ranking may sink into a titanic historical irrelevancy.

ENDNOTES

1. Formal schooling is a sequentially structured and hierarchically organized series of curricula and credentialling programs of study typically administered in elementary, secondary and tertiary levels, planned and directed by a teacher, and requiring compulsory attendance until mid-adolescence. Non-formal education refers to all other organized educational activities offered by any social institution and is typically voluntarily chosen. Informal learning is any activity involving pursuit of knowledge which occurs outside the curricula of educational institutions and whose terms are determined by the individuals and groups who choose to engage in it without either externally imposed criteria or an institutionally authorized instructor. For further discussion of these terms, see Livingstone (1999b) and Statistics Canada (1997a, pp. 103-106).

2. Informal learning can be further differentiated into "informal education" which involves a recognized mentor and "self-directed informal learning" in which individuals or groups learn on their own. This distinction will not be addressed in the current report but is discussed more fully in Livingstone (2001).

3. For a fuller account of different types of theories of work-learning relations, see Livingstone, 1999a, pp. 133-225).

4 . For documentation of all of these trends, see Betcherman, McMullen and Davidman (1998).

5. Differences between comparable categories in these two surveys may be attributable to slight differences in age group coverage, margins of sampling error because of the smaller size of the NALL

sample, specific category definitions and changing labour market conditions in the 1997-98 period. Most notably, the nonemployed full-time student category is much larger in the AETS survey because of the presence of 17 year olds. See note 6 for further details.

6. The January 1994 and 1998 Adult Education and Training Survey (Statistics Canada, 1997a, 1999a) provide measures of Canadian adults' participation in schooling and further education courses during 1993 and 1997, respectively. These are supplementary samples drawn from the Labour Force Survey (LFS) sample and modified to include all members of households over age 17. Responses have been weighted by province-age-sex and economic region population profiles based on census projections, as well as by several other technical adjustments to account for the selection of one person per household from the LFS sample of dwellings, use of a five-sixths subsample from the LFS sample and the selection of one person per household. The fall 1998 survey by the research network on New Approaches to Lifelong Learning (NALL, 1999) provides similar measures of adult education plus extensive measures of informal learning activities. This is a representative sample of all household members 18 years of age and over. Responses have been weighted by 1996 census profiles on age, sex and formal educational attainment. The AETS samples may slightly underrepresent the least formally educated Canadians while the NALL sample excludes those in the first year beyond compulsory schooling. All three samples are comparable within small margins of error with regard to general population estimates of major demographic characteristics.

7 . In fact, the weighted sample results for the 1997 AETS survey indicate a drop from the 1993 level of 35 percent to less than 32 percent. The Ontario surveys found a drop from 36 percent in 1992 to 25 percent in 1998.

8. The respective questions were as follows:

> AETS: "At any time during [the past year], did you receive any training or education, including courses, private lessons, correspondence courses, workshops, apprenticeship training, arts, crafts, recreation courses or any other training or education?"
> NALL: "By formally organized education, we mean any course that has a specific purpose, and was held either at a scheduled time with an instructor or group leader or by correspondence or distance education for paid employment or any other purpose. In the last year, have you taken any kind of formal organized courses, workshops or lessons no matter how long or short?"

9. All differences in factor effects on participation rates cited in the paper are statistically significant at the .01 level of confidence using both parametric and non-parametric measures of association.

10 . Numerous case studies, as well as a follow-up survey with a sub-sample of the original NALL survey respondents and more in-depth questions, are being conducted by members of the NALL research network. Findings are reported on the NALL website. In addition, the Applied Research Branch of Human Resources Development Canada is systematically exploring ways of including measures of informal learning in future government-sponsored surveys (Baran, Berube, Roy and Salmon, 2000).

11 . Both the estimates of magnitude and the group differences in intentional informal learning patterns should be treated as preliminary findings. This is because: (1) there are no valid precedents for the specific array and format of items about informal learning used in the NALL survey; (2) the prior empirical studies of self-directed learning found no significant group differences; (3) the relatively small sample size of the NALL sample (N=1562) allows margins of error that are nearly as large as the differences noted; and (4) informal learning is a particularly diffuse phenomenon which is prone to wide subjective differences in personal estimates. Replication studies are much needed to test the reliability of all of these original estimates as well as you determine trends in the incidence of informal learning.

12 .Recent attention to the significance of lifelong learning has stimulated government agencies to begin to estimate the extent of informal learning. The 1998 General Social Survey contained a few questions on informal learning. The questions were as follows:

> (1) Many people improve their knowledge of a subject or upgrade their skills on their own

instead of taking a course. They read books, watch television programs, use a computer or talk to someone with the necessary expertise. Have you undertaken any of these activities during the past month?
(2) What were you learning?
(3) Which of the following media did you use?
(4) How many hours did you devote to these learning activities last month?

About 30 percent of respondents gave an initial positive response. After responding to the other two general questions, the remaining respondents then estimated that they were spending about 19 hours per month on these learning activities, or nearly 5 hours per week. Averaged over the entire sample, this would reduce to about 1.5 hours per week, or one-tenth of the NALL estimate. This is very likely a serious underestimate of the actual current extent of intentional informal learning. The initial screening question is posed immediately after a series of questions about initial schooling, adult credit courses and non-credit courses which serve to emphasize the relation between organized education and learning, and provides no opportunity to consider informal learning in relation to any specific learning context. In addition, the question dichotomizes courses and learning on your own, suggesting that you can only do one or the other, which is clearly false. While further survey and case study research is required to provide reliable extent and trend estimates, it is likely that this initial GSS survey effort has merely found the iceberg of intentional informal learning rather than plumbing its depth.

13. All measures of association of work and learning reported in this table are pairwise correlations, limited to those respondents who indicated participating in the respective forms of work. If all those who indicate they do no work in the respective spheres and therefore are very unlikely to do any related informal learning were included in the analysis, measures of association would be artificially inflated and the association between total work time and total learning time would be similarly inflated.

14 . For detailed discussion of the conception of occupational groups used here and the measures of ownership status and social and technical relations of production in the labour process required to construct this variable, see Livingstone and Mangan (1996).

15 . In this previous research, I review traditions of research on underemployment issues, define each of these dimensions and provide extensive empirical evidence for Canada, the United States and other G7 countries and Sweden(see Livingstone, 1999a, pp. 52-132) I also identified a further dimension of general underemployment, the talent use gap. This gap refers to systemic discrimination in schooling against children from disadvantaged social backgrounds in social class, race and gender terms. There is a large literature in social science which documents this process as the inequality of educational opportunity (see Curtis, Livingstone and Smaller, 1992. But it can also be regarded as a waste of the potential that many people have to achieve advanced educational credentials to qualify to enter jobs corresponding with their initial talent levels. Fuller discussion is beyond the scope of this report.

16. The NALL survey did not contain a clear question on educational entry requirements for respondents' jobs. The results reported here are drawn from an Ontario population survey also conducted in 1998 (Livingstone, Hart and Davie, 1999). These findings on credential underemployment and its relations to adult learning activities are similar to those in other earlier Canadian surveys (see Livingstone, 1999a).

17 . The GED scale is intended to embrace those aspects of knowledge which are required of the worker for satisfactory job performance. The different levels of this scale on each of three dimensions (reasoning, mathematical and language development) range from carrying out simple instructions to applying logical or scientific principles to a wide range of problems. The NALL survey data on respondents' occupations has been assigned GED scores based on the coding scheme developed by Alf Hunter and his colleagues (see Hunter and Manley,1986) from the Canadian Classification and Dictionary of Occupations for the 1971 census, with additional estimates for some new occupations. The strengths and limitations of these measures are discussed more fully in Livingstone (1999a, pp. 78-85). Alternative measures of occupational skill content are currently under development by Statistics Canada..

18 . For example, participation orientations might include current participants who plan to take future

courses, current participants who do not plan future courses, current non-participants who plan future courses, and current non-participants who do not plan future courses. The present analysis focuses primarily on the last of these orientations, which may be considered to include those most marginalized from adult education participation. Swedish longitudinal research suggests that even the most marginalized people with no expressed intention to participate tend to actually participate in adult education in substantial numbers over time; conversely, economic, demographic and specific contextual factors can significantly impede future participation among current participants who intend to continue to participate (Rubenson, 1996).

REFERENCES

Aarts, S. et al. (1999). *A Slice of the Iceberg: Cross-Canada Study of Prior Learning Assessment and Recognition*. Toronto: Cross-Canada Partnership on PLAR.

Adams, M. et. al. (1998). *Network for New Approaches to Lifelong Learning (NALL)*, (Toronto, Centre for the Study of Education and Work, Ontario Institute for the Study of Education at the University of Toronto).

Advisory Committee on the Changing Workplace. (1997). *Collective Reflection on the Changing Workplace*. Ottawa: Human Resources Development Canada.

Advisory Group on Working Time and the Distribution of Work. (1994). *Report of the Advisory Group on Working Time and the Distribution of Work*. Ottawa: Minister of Supply and Services, (December).

Baron, J., G. Berube, R. Roy and W. Salmon (2000). *Adult Education and Training in Canada: Key Knowledge Gaps*. Ottawa: Applied Research Branch, Human Resources Development Canada. Strategic Policy Research Paper R-00-6E.

Barton, P.E. (2000). *What Jobs Require: Literacy, Education and Training, 1940-2006*. Princeton, NJ: Educational Testing Service.

Becker, G. (1964). *Human Capital: A Theoretical and Empirical Analysis, with Special Reference to Educatio*n. New York: National Bureau of Economic Research.

Becker, G. (1993). *Human Capital*. (Third Edition). Chicago: University of Chicago Press.

Beder, H. (1991). *Adult Literacy: Issues for Policy and Practice*. Malabar, FA.: Krieger.

Belanger, P. and S. Valdivielso (eds.) (1997). *The Emergence of Learning Societies: Who Participates in Adult Learning?* Oxford: Elsevier.

Bell, D. (1973). *The Coming of Post-Industrial Society*. New York, Basic Books.

Benimadhu,.P. (1987). *Hours of Work: Trends and Attitudes in Canada*. Ottawa: Conferenc Board of Canada, Report No. 18-87.

Bennett, K. (1994). "Recent Information on Training," *Perspectives on Labour and Income* 6, 1.

Berg, I. (1970). *Education and Jobs: The Great Training Robbery*. New York, Praeger.

Betcherman, G. (1992). "Are Canadian firms underinvesting in training?," *Canadian Business Economics* 1, 1: 25-33.

Betcherman, G., N. Leckie & K. McMullen. (1997). *Developing Skills in the Canadian Workplace: The Results of the Ekos Workplace Training Survey*. Ottawa: Canadian Policy Research Networks.

Betcherman, G., N. Leckie and K. McMullen. (1998). *Barriers to Employer-Sponsored Training in Canada*. Ottawa: Canadian Policy Research Networks.

Betcherman, G. and G. Lowe. (1997). *The Future of Work in Canada: A Synthesis Report*. Ottawa: Canadian Policy Research Networks.

Betcherman, G., K. McMullen and K. Davidman. (1998). *Training for the New Economy*. Ottawa: Canadian Policy Research Networks.

Boshier, R. et al. (1997). "Best and Worst Dressed Web Courses: Strutting into the 21st Century in Comfort and Style," *Distance Education* 18, 2: 327-349.

Braverman, H. (1974). *Labor and Monopoly Capital*. New York: New York Monthly Review Press.

Brenner, R. (2000). *Turbulence in the World Economy*. London: Verso.

Brookfield, S. (1981). "The Adult Education Learning Iceberg," *Adult Education* (UK) 54, 2: 110-118.

Burawoy, M. (1985). *The Politics of Production*. London: Verso.

Census of Canada (1963). *Population: Schooling by Age Groups*. Ottawa: Dominion Bureau of Statistics. Bulletin 1.3B6.

Candy, P. (1993). *Self-Direction for Lifelong Learning: A Comprehensive Guide to Theory and Practice*. San Francisco, Jossey-Bass.

Carrick, R. (1996). "Jobless rate understated, bank reports," *The Toronto Star* (May 10): E3.

Center for Workforce Development. (1998) The Teaching Firm: Where Productive Work and Learning Converge. Newton, Mass.: Education Development Center.

Collins, R. (1979). *The Credential Society: An Historical Sociology of Education and Stratification*. New York: Academic Press.

Crompton, S. (1992). "Studying on the Job," *Perspectives on Labour and Income* 4, 2: 30-8.

Courtney, S. (1992). *Why Adults Learn: Towards a Theory of Participation in Adult Education*. London: Routledge.

Cross, K.P. (1981). *Adults as Learners: Increasing Participation and Facilitating Learning*. San Francisco: Jossey-Bass.

Cuban, L. (1986). *Teachers and Machines: The Classroom Use of Technology Since 1920*. New York: Teachers' College Press.

Curtis, B., D.W. Livingstone and H. Smaller. (1992). *Stacking the Deck: The Streaming of Working Class Kinds in Ontario Schools*. Toronto: OurSchools/OurSelves.

Daly, K. (2000). *It Keeps Getting Faster: Changing Patterns of Time in Families*. Ottawa: Vanier Institute of the Family.

Davis, J.A. and T.W. Smith. (1994) *General Social Surveys 1972-1994*. Chicago: National Opinion Research Center.

Devereaux, M. (1985). *One in Every Five: A Survey of Adult Education in Canada*.Ottawa, Statistics Canada and Education Support Section, Secretary of State.

Dhooma, R. (1998, April 9). "Hey, Boss, Is It Nap Time Yet?" *Toronto Sun Life Archive*.

Dickenson, P. and G. Sciadas. (1999, February). "Canadians Connected," *Canadian Economic Observer*. Ottawa: Statistics Canada. Catalogue No. 11-010-XPB.

Dominion Bureau of Statistics. (1963). *Participants in Further Education in Canada*. Ottawa: DBS.

Drolet, M. and R. Morissette. (1997). *Working More? Working Less? What Do Canadian Workers Prefer?* Research Paper Series: Analytical Studies Branch. No. 104--Ottawa: Statistics Canada.

Economic Council of Canada. (1990). *Good Jobs, Bad Jobs: Employment in the Service Economy*. Ottawa: Minster of Supply and Services.

Ekos Research Associates. (1993). *Reskilling Society (Phase I): Industrial Perspectives. The National Survey of Employers on Training and Development Issues*. Hull, QUE: Human Resources Development Canada.

Engestrom, Y. (1992). *Interactive Expertise: Studies in Distributed Working Intelligence*. Helsinki: Department of Education, University of Helsinki.

Eraut, M. (1999). "Non-formal Learning in the Workplace--The Hidden Dimension of Lifelong Learning: A Framework for Analysis and the Problems It Poses for the Researcher." Plenary paper presented at the First international Conference on Researching Work and Learning, Leeds University, September 10-12.

Freeman, C. and L. Soete. (1994). *Work for All or Mass Unemployment: Computerised Technical Change into the 21st Century*. London: Pinter.

Fredericks, J. (1993). "A Comparison of Results from the General Social Survey on Time Use—1986 and 1992." Research Paper. Ottawa: Statistics Canada.

Fredericks, J. (1995). *As Time Goes By ... Time Use of Canadians*. General Social Survey. Ottawa: Statistics Canada.

General Social Survey, Cycle 12. (2000). *Time Use, 1998*. Ottawa; Statistics Canada Data Liberation Initiative.

Gibb-Clark, M. (1997). "About 12% of Jobs Temporary, Statscan Finds," *The Globe and Mail*. (September 11): B4.

Glendenning, F. and I. Stuart-Hamilton (eds.) (1995). *Learning and Cognition in Later Life*. Aldershot: Arena.

Hall, M. et al. *Caring Canadians, Involved Canadians: Highlights from the 1997 National Survey of Giving, Volunteering and Participating*. Ottawa: Minister of Industry.

Handel, M. (2000). *Trends in Direct Measures of Job Skill Requirements*. Working Paper No. 301, Jerome Levy Economics Institute. Available on-line: www.levy.org/does/wrkpap/papers.

Harris Poll. (1999, June). *Time at Work and Play*. Press release of June 10-15, 1999 survey.

Harrison, R. (1993). "Disaffection and Access," in J. Calder (ed.). *Disaafection and Diversity: Overcoming Barriers for Adult Learners*. London: Falmer Press: 2-17.

Husen, T. (1974). *The Learning Society*. London: Methuen.

Hay, J. (2000). "A Profile of Underemployed University Graduates." Unpublished paper, Centre for Education Statistics, Statistics Canada.

Hayden, A. (1999). *Sharing the Work, Sparing the Planet: Work Time, Consumption and Ecology*. Toronto: Between the Lines.

Human Resources Development Canada (2000). "Lifelong Learning: A Reality for Six Million Adult Canadians," *Applied Research Branch Bulletin* 6,1 (Winter-Spring). Available on-line: www.hrdc-drhc.gc.ca/arb/publications.

Hunter, A and M. Manley (1986). "On the Task Content of Work" *Canadian Review of Sociology and Anthropology*. 23, 1: 47-71.

Hutchins, R. (1968). *The Learning Society*. New York: Praeger.

Angus Reid Group. (2000, July 26). *Canadian Internet Acess Continues to Grow, and Users Say the Net Has Had a Significant Impact on Their Lives*. Ipsos-Reid Press release.

Illich, I. (1971). *Deschooling Society*. New York: Harper and Row.

Information Highway Advisory Council. (1995). *Connecting Community Content: The Challenge of the Information Highway*. Ottawa: Minister of Supply and Services.

Jackson, C. (1996). "Measuring and Valuing Households' Unpaid Work," *Canadian Social Trends* (Autumn): 25-29.

Johnstone, J. and R. Rivera. (1965). *Volunteers for Learning: A Study of the Educational Pursuits of American Adults*. Chicago: Aldine.

Quigley, A. *Rethinking Literacy Education: The Critical Need for Practice-Based Change*. San Francisco: Jossey-Bass.

Karasek, R. and T. Theorell. (1990). *Healthy Work: Stress, Productivity and the Reconstruction of Working Life*. New York: Basic Books.

Katz, J. and P. Aspden. (1998). "Internet Dropouts in the USA," *Telecommunications Policy* (July): 22,4-5.

Keating, D. (1999). *Developmental Health and the Wealth of Nations: Social, Biological and Educational Dynamics*. New York: Guilford.

Kohn, M. and C. Schooler (1983). *Work and Personality: An Inquiry in to the Impact of Social Stratification*. Norwood, NJ: Ablex Publishing.

Knowles, M. (1970). *The Modern Practice of Adult Education: Andragogy versus Pedagogy*. Chicago: Follett.

Krahn, H. and G. Lowe. (1998). *Literacy Utilization in Canadian Workplaces*. Ottawa: Statistics Canada.

Kumar, K. (1995). *From Post-Industrial to Post-Modern Society: New Theories of the Contemporary World*. Oxford: Blackwell.

Lagace, M. (1968). *Educational Attainment in Canada: Some Regional and Social Aspects*. Ottawa: Dominion Bureau of Statistics. Special Labour Force Studies No. 7.

Lave, J. (1988). *Cognition in Practice: Mind, Mathematics and Culture in Everyday Life*. New York: Cambridge University Press.

Lavoie, M. and R. Roy. (1998). *Employment in the Knowledge-Based Economy: A Growth Accounting Exercise for Canada*. Research Paper R-98-8E. Applied Research Branch, Human Resources Development Canada.

Leckie, N. (1996). *On Skill Requirements Trends in Canada, 1971-1991*. Research Report for Human Resources Development Canada and Canadian Policy Research Networks.

Livingstone, D.W. (1996). "Steel Work: Recasting the Core Workforce at Hilton Works, 1981-96". Final Report of the Workplace Change Section of the Steelworker Families Project. Toronto: Department of Sociology and Equity Studies in Education, OISE/UT.

Livingstone, D.W. (1997a). "The Limits of Human Capital Theory," *Policy Options*. 18, 6: 9-13.

Livingstone, D. W. (1997b). "Computer Literacy, the 'Knowledge Economy' and Information Control: Micro Myths and Macro Choices," in M. Moll (ed.) *Tech High: Globalization and the Future of Canadian Education*. Ottawa: Canadian Centre for Policy Alternatives, 99-116.

Livingstone, D. W. (1999a). *The Education-Jobs Gap: Underemployment or Economic Democracy*. Boulder: Westview Press; Toronto: Garamond Press (paperback edition).

Livingstone, D.W. (1999b). "Exploring the Icebergs of Adult Learning: Findings of the First Canadian Survey of Informal Learning Practices," *Canadian Journal for the Study of Adult Education* 13, 2 (1999): 49-72.

Livingstone, D.W. (2000). "Underemployment: System Glitches or Systemic Challenge?" Porter Lecture, Canadian Sociology and Anthropology Association, University of Alberta, May 29, 2000.

Livingstone, D.W. (2001). "Adults' Informal Learning: Definitions, Findings, Gaps and Future Research". Position paper for the Advisory Panel of Experts on Adult Learning, Applied Research Branch, Human Resources Development Canada.

Livingstone, D.W., Hart, D. and L. Davie. (1987). *Public Attitudes Toward Education in Ontario, 1986: Sixth OISE Survey*. Toronto: OISE Press.

Livingstone, D.W., D. Hart and L. Davie. (1993). *Public Attitudes Toward Education in Ontario 1992: Ninth OISE Survey*. Toronto: OISE Press.

Livingstone, D.W., D. Hart and L. Davie. (1997). *Public Attitudes Toward Education in Ontario 1996: Eleventh OISE/UT Survey*. Toronto: University of Toronto Press.

Livingstone, D.W., D. Hart and L. Davie. (1999). *Public Attitudes Toward Education in Ontario 1998: Twelfth OISE/UT Survey*. Toronto: University of Toronto Press.

Livingstone, D.W., D. Hart and L. Davie. (2001). *Public Attitudes Toward Education in Ontario 2000: Thirteenth OISE/UT Survey*. Special Issue of Orbit.

Livingstone, D.W. and M. Luxton. (1996). "Gender Consciousness at Work: Modification of the Male Breadwinner Norm," in D.W. Livingstone and J.M. Mangan (eds.) *Recast Dreams: Class and Gender Consciousness in Steeltown*. Toronto: Garamond Press, 100-130.

Livingstone, D.W. and J.M. Mangan (eds.). (1996). *Recast Dreams: Class and Gender Consciousness in Steeltown*. Toronto: Garamond Press.

Livingstone, D.W. and P. Sawchuk. (2000). "Beyond Cultural Capital Theory: Hidden Dimensions of Working Class Learning," *Review of Education, Pedagogy and Cultural Studies* 22,2: 203-221.

Lowe, G. (1992). *Human Resource Challenges of Education, Computers and Retirement*. Ottawa, Statistics Canada.

Lowe, G. (1996). "The Use of Computers in the Canadian Workplace." Paper prepared for Information Technology Innovation, Industry Canada, March 3.

Lowe, G. (2000). *The Quality of Work: A People-Centred Agenda*. Don Mills: Oxford University Press.

McCain, M.N. and J.F. Mustard. (1999). *Reversing the Real Brain Drain: Early Years Study. Final Report*. Toronto: Ontario Children's Secretariat.

McEwen, R. (1998). *Narrowing Opportunities for Adults in Ontario Secondary Schools*. Toronto: Ontario Secondary School Teachers' Federation.

MacBride-King, J. et al. (2000). *What to do Before the Well Runs Dry: Managing Scarce Skills*. Ottawa: Conference Board of Canada.

Machlup, F. (1980). *Knowledge, Its Creation, Distribution and Economic Significance*. Princeton, Princeton University Press.

Macredie, I. and D. Sewell. (1998). *Statistics Canada Measurement and Valuation of Unpaid Work. Research Note*. Ottawa: Statistics Canada. .

Marshall, R. and M. Tucker. (1994). *Thinking for a Living: Education and the Wealth of Nations*. New York: Basic Books.

Milani, B. (2000). *Designing the Green Economy: The Postindustrial Alternative to Corporate Globalization*. Lanham, MD.: Rowman & Littlefield.

Myles, J. (1991). "Women, the Welfare State and Care Giving," *Canadian Journal on Aging* 10,2: 82-85.

Myles, J. and G. Fawcett. (1990). *Job Skills and the Service Economy*. Ottawa: Economic Council of Canada. Working Paper No. 4.

NALL. (1999). *Lifelong Learning Profiles: Findings of the First Canadian Survey of Informal Learning Practices*. Website of the Research Network on New Approaches to Lifelong Learning:www.nall.ca.

National Advisory Panel on Skill Development Leave. (1984). *Learning for Life: Overcoming the Separation of Work and Learning*. Ottawa: Minister of Employment and Immigration.

National Center on Education and the Economy. (1990). *America's Choice: High Skills or Low Wages*. Washington, DC: NCEE.

National Center on the Educational Quality of the Workforce. (1995). *First Findings from the EQW National: Employer Survey*. Philadelphia, National Center on the Educational Quality of the Workforce.

Noble, D. (1998). "Digital Diploma Mills," *Monthly Review* 49, 9: 38-52.

OECD. (1994). *The OECD Job Study: Facts, Analysis, Strategies*. Paris: OECD.

OECD (1996). *Lifelong Learning for All: Meeting of the Education Committee at Ministerial Level, 16-17 January 1996*. Paris: OECD.

OECD. (1998). "Lifelong Learning: A Monitoring Framework and Trends in Participation," in *Centre for Educational Research and Innovation Education Policy Analysis 1998*. Paris: OECD, 7-24.

Office of Learning Technologies. (1998). *Canada's Adult Learners: A Profile*. Ottawa: HRDC. Fact Sheet, April.

OISE Survey of Educational Issues Data Archive is accessible through the survey website: www.oise.utoronto.ca/OISE-Survey.

Penland, P. (1977). *Self-Planned Learning in America*. Pittsburgh: University of Pittsburgh.

Polanyi, M. (1983). *The Tacit Dimension*. Gloucester: Peter Smith.

Putnam, R. (1995). "Bowling Alone: America's Declining Social Capital," *Journal of Democracy* 6, 1: 65-78.

Quirke, L. (2001). "Access in Jeopardy: Social Class, Finances and University Attendance," in D. Doherty-Delorme and E. Shaker (eds.). *Missing Pieces II: An Alternative Guide to Canadian Post-secondary Education*. Ottawa: Canadian Centre for Policy Alternatives, pp. 63-70..

Reddick, A., C. Boucher and M. Groseilliers. (2000). *The Dual Digital Divide: The Information Highway in Canada*. Ottawa: Public Interest Advocacy Centre.

Rifkin, J. (1995). *The End of Work: The Decline of the Global Labor Force and the Dawn of the Post-Market Era*. New York: Tarcher/Putnam.

Robinson, J. and G. Godbey. (1997). *Time for Life: The Surprising Ways Americans Use Their Time*. University Park, PA.: Pennsylvania State University Press.

Rubenson, K. (1983). *Barriers to Participation in Adult Education*. Hull: Employment and Immigration Canada.

Rubenson, K. (1987). "Participation in Recurrent Education: A Research Review," in H.G. Schuetze and D. Istance (eds.) *Recurrent Education Revisited: Mode of Participation and Financing*. Stockholm: Almqvist & Wiksell International, 39-67.

Rubenson, K. (1996). "Studieforbundens roll i vuxenutbildningen," *Statens Offentliga Utredningar* 154. Stockholm: Fritzes.

Rubenson, K. and G. Xu. (1997). "Barriers to Participation in Adult Education: Towards a New Understanding," in P. Belanger and A. Tuijnman (eds.) *New Patterns of Adult Learning: A Six Country Comparative Study*. New York: Elsevier, 77-100.

Sawchuk, P. (1996) *Working Class Informal Learning and Computer Literacy*. M.A. Thesis, University of Toronto.

Schor, J. (1991). *The Overworked American: The Unexpected Decline of Leisure*. New York: Basic Books

Spear, G.E. 1988. "Beyond the Organizing Circumstance: A Search for Methodology for the Study of Self-Directed Learning," in H. Long and associates (eds.) *Self-Directed Learning: Application and Theory*. Athens, GA.: University of Georgia Adult Education Department.

Speech from the Throne to Open the Second Session of the Tthirty-Sixth Parliament of Canada. Available at website: http://www.pco-bcp.gc.ca/sft-ddt/doc/fulltext.

Statistics Canada. (1996). *Reading the Future: A Portrait of Literacy in Canada*. Ottawa: National Literacy Secretariat, Human resources Development Canada and Statistics Canada.

Statistics Canada. (1997a). *Adult Education and Training in Canada: Report of the 1994 Adult Education and Training Survey*. Hull: Statistics Canada. (AETS 1993).

Statistics Canada. (1998). *The Evolving Workplace: Findings from the Pilot Workplace and Employee Survey*. Ottawa: Statistics Canada.

Statistics Canada. (1999a). *Adult Education and Training Survey 1998*. Ottawa: Statistics Canada. Catalogue No. 81C0045. (AETS 1997).

Statistics Canada (1999b). *Overview of the Time Use of Canadians in 1998*. Ottawa: Statistics Canada.

Statistics Canada (1999c). "Supplementary Measures of Unemployment," *Labour Force Update* 3, 3: 1-23.

Statistics Canada (1999, November 9). General Social Survey: Time use—*The Daily*.

Statistics Canada. (1999, December 13). Household Spending, Dwelling Characteristics and Household facilities—*The Daily*.

Statistics Canada (2000). *Education Indicators in Canada: Report of the Pan-Canadian Education Indicators Program 1999*. Ottawa: Statistics Canada.

Statistics Canada. (2000, February 21). "Education Indicators," *The Daily*.

Statistics Canada. (2000, March 17). "1996 Census: Labour Force Activity, Occupation and Industry, Place of Work, Mode of transportation to Work, Unpaid Work," *The Daily*.

Statistics Canada. (2000, March 31). "Health Reports: How Healthy Are Canadians?" *The Daily*.

Statistics Canada. (2000, May 19). "Household Internet Use,"*The Daily*.

Status of Women Canada. (1997). *Economic Gender Equality Indicators*. Ottawa: Federal-Provincial/Territorial Ministers Responsible for the Status of Women.

Stiglitz, J. (1975). "The Theory of Screening, Education, and the Distribution of Income," *American Economic Review* 65: 283-300.

Tandan, N. (1969). *Underutilization of Manpower in Canada*. Ottawa: Dominion Bureau of Statistics. Special Labour Force Studies No. 8.

Tanner, J., H. Krahn and T. Hartnagel. (1995). *Fractured Transitions from School to Work*. Toronto: Oxford University Press.

Theobald, S. (1997). "Canadians burning the midnight oil—for free," *Toronto Star* (July 15): A1.

Thomas, A. (1993). "Transitions: From School to Work and Back: A New Paradigm," in P. Anisef and P. Axelrod (eds.) *Schooling and Employment in Canada*. Toronto: Thompson Educational Publishing, 117-128.

Thomas, A.. et al. (1982). *Adult Learning About Canada*. Ottawa: Department of the Secretary of State.

Tough, A. (1971). *The Adult's Learning Projects*. Toronto: OISE Press.

Tough, A. (1978). "Major learning efforts: Recent research and future directions," *Adult education* 28: 250 - 63.

Tough, A. (1979). *The Adult's Learning Projects: A Fresh Approach to Theory and Practice in Adult Learning*. Toronto:

Tuijnman, A. (1991). "Lifelong Education: A Test of the Accumulation Hypothesis," *International Journal of Lifelong Education* 10,4: 275-285.

U.S. Department of Labor, Bureau of Labor Statistics. (1994). *Employer-Provided Formal Training*,Washington, DC: U.S. Department of Labor.

Vanstone, S. et. al. (1999). *Publications and Resources on Prior Learning Assessment and Recognition*.

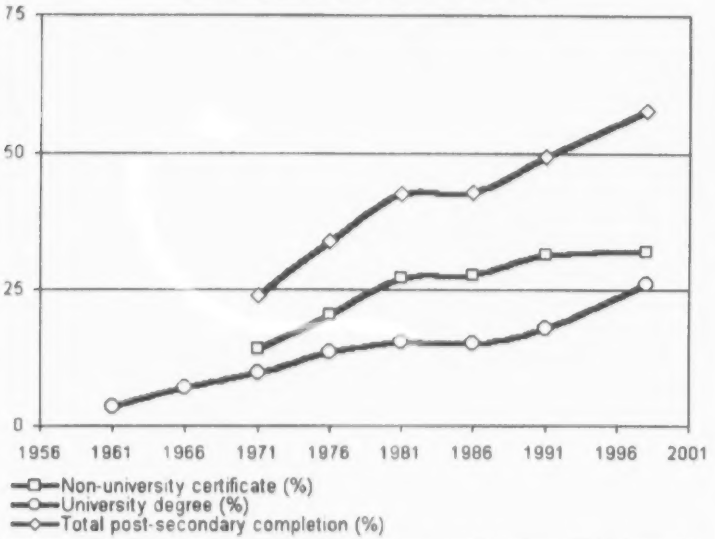
Toronto: NALL.

Waring, M. (1988). *If Women Counted: A New Feminist Economics*. San Francisco: Harper and Row.

Yalnizyan, A. (1998). *The Growing Gap: A Report on Growing Inequality between the Rich and Poor in Canada*. Toronto: Centre for Social Justice.

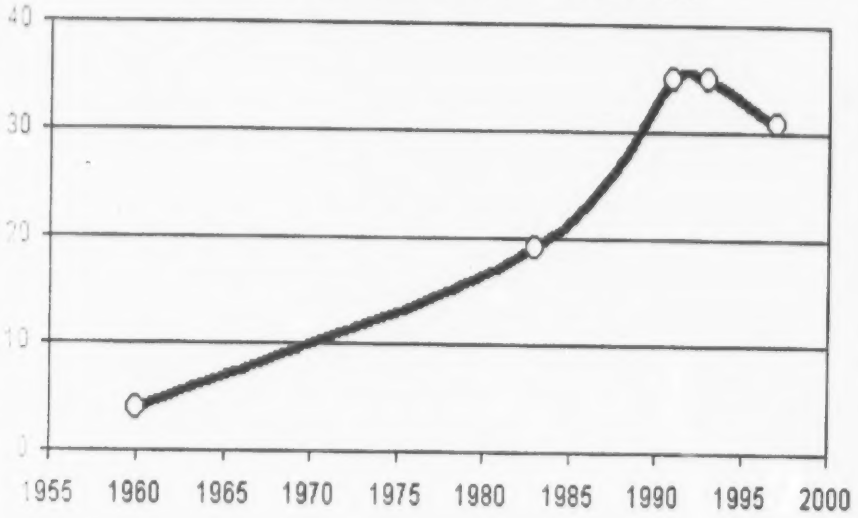
Yalnizyan, A. (2000). *Canada's Great Divide: The Politics of the Growing Gap between Rich and Poor in the 1990s*. Toronto: Centre for Social Justice.

Table 2.1 Post-secondary Education Completion, 25-29 Age Group, Canada, 1961-98



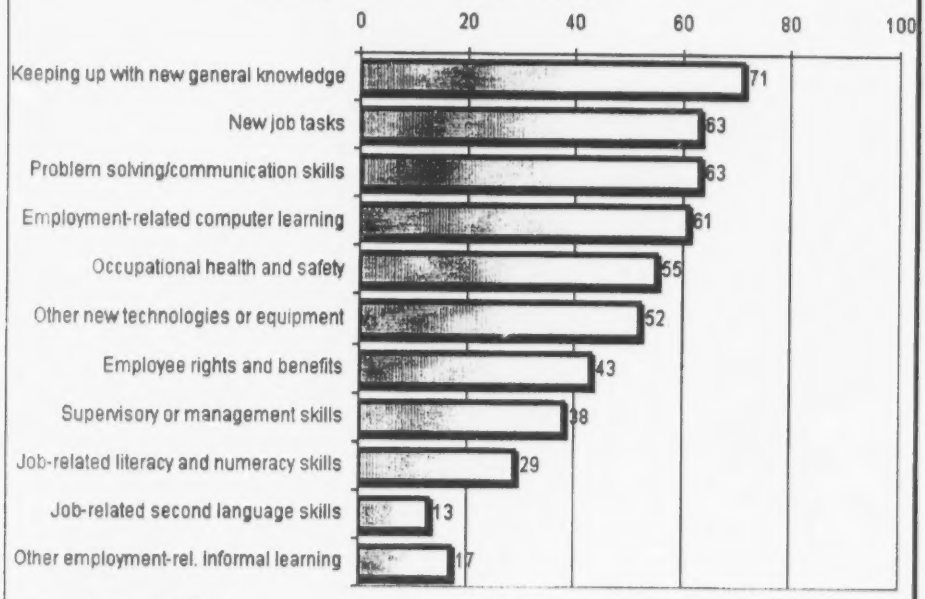
Sources: 1961: Census of Canada (1963) Table 102; 1966: Lagace (1968) Table C3; 1971-91: special tabulations from census data files; 1998: Statistics Canada (2000).
* Estimated from 1976 census.

Table 2.2 Participation in Formal and Non-Formal Education, Canadians Over 17, 1960-1997 (%)



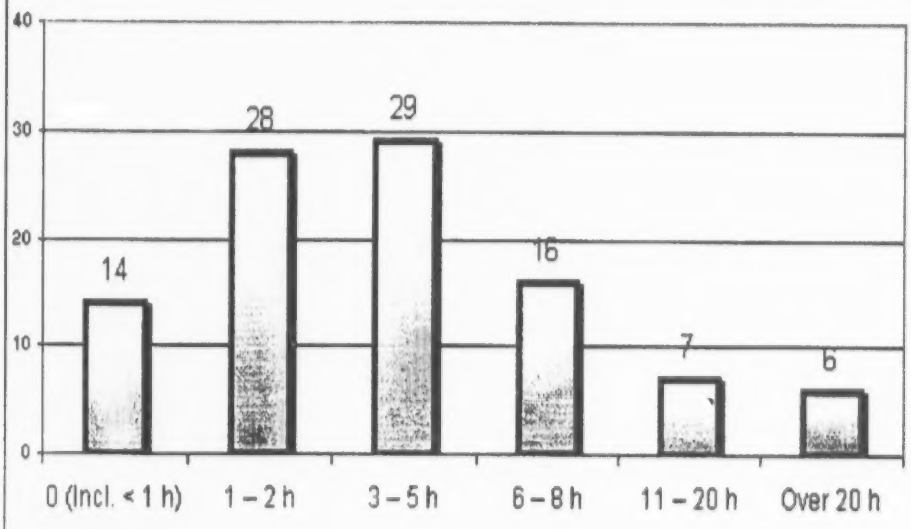
Sources: 1960: Dominion Bureau of Statistics (1963); 1983: Devereaux (1985); 1991-97: AETS.

Table 2.4 Employment-related Informal Learning Activities, Employed Labour Force, 1998 (%)



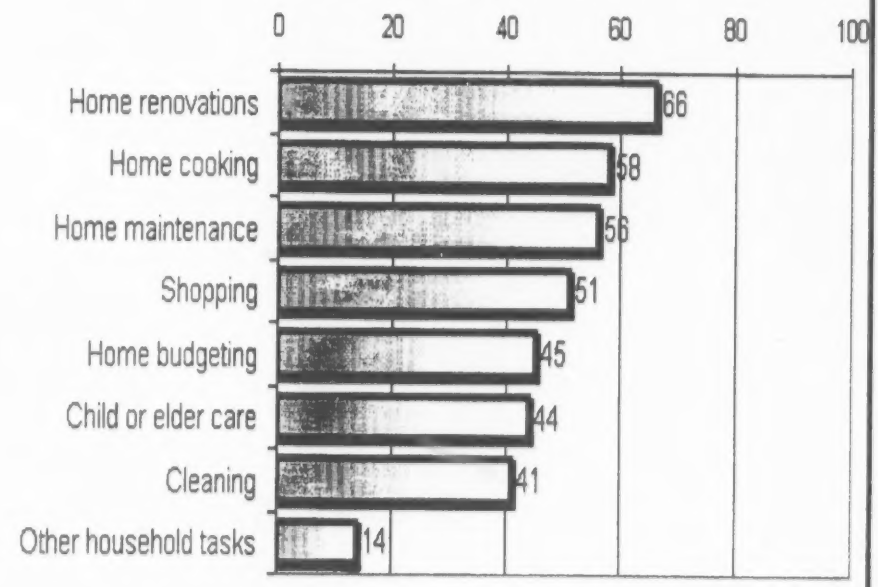
Source: NALL (1999). N=951.

Table 2.5 Distribution of Employment-related Informal Learning Time, Employed Labour Force, 1998 (%)



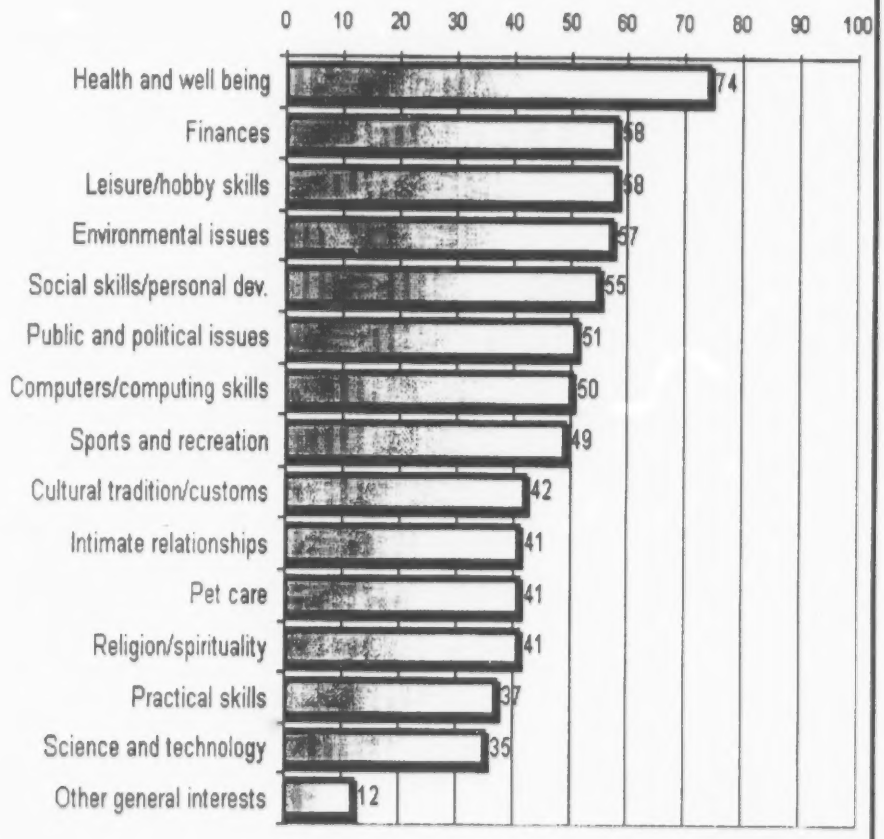
Source: NALL (1999). N=951.

Table 2.6 Household Work-related Informal Learning Activities, All Participants, 1998 (%)



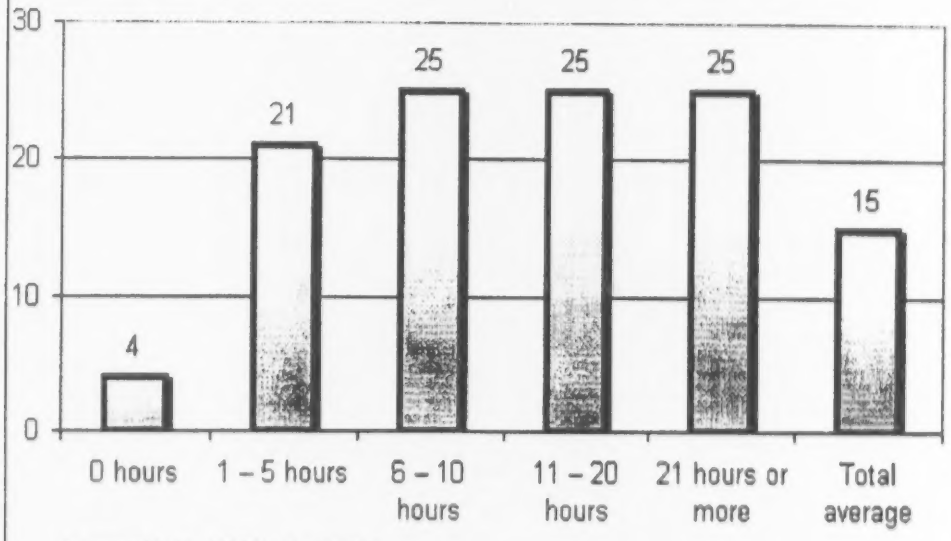
Source: NALL (1999). N=1460.

Table 2.8 General Interest Informal Learning Activities, All Participants, 1998 (%)



Source: NALL (1999). N=1332.

Table 2.9 Distribution of Total Weekly Hours of Informal Learning, All Adults, 1998 (%)



Source: NALL (1999). N = 1565.